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ABSTRACT

Third, and final, in a series of two-week workshops designed to teach the techniques of developing competency-based curriculum materials, the phase III workshop had two major thrusts: to assess the quality of curriculum materials previously developed and to determine in what areas of curriculum development the workshop participants needed professional assistance. Workshop objectives were established through participant questionnaires, assessment activities, and review of the format for learning activities established during the phase II workshop. The format for assessment instruments developed during phase II was deemed acceptable with a few minor changes. Emphasis was placed on participants learning to write terminal performance objectives, enabling objectives, performance objectives, learning activities, and criterion-referenced tests or assessment instruments. The bulk of the report consists of appendixes containing materials developed in the workshops: appendix A: behavioral objective, learning activity, and assessment instrument handouts and checklists; appendix B: programmed learning activities (competency, writing performance objectives, and validating performance objectives); appendix C: principles of writing learning activities; appendix D: types of assessment procedures and criterion assessment; appendix E: recommended format for learning packages; and appendix F: ten learning packet samples, two each in five areas: advertising art, architectural drawing, literary arts, photography, and printing. (BL)

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ED146367

RCA

October 3, 1974

Final RCA Staff Development Consulting Report for the D. C. Career Development Center

Prepared for

D. C. Public Schools
Career Development Programs
415 12th Street, N.W.
Washington, D.C.

Prepared by

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A Division of RCA Corporation
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U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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FINAL RCA STAFF DEVELOPMENT CONSULTING REPORT FOR THE D. C. CAREER DEVELOPMENT CENTER: PHASE THREE

I. INTRODUCTION

The RCA Education Services, a part of the RCA Service Company, a division of RCA, was contracted by the Washington, D. C. Department of Public School to perform services in organizing and executing Phase III of a staff and curriculum development program for the Lemuel Penn Career Development Center located in the National Geographic Building, 3rd and R Streets. N. W. Washington, D. C. RCA has had the opportunity of conducting two other staff development workshops for the new Career Development Center (reports on these workshops have been filed with the Department of Public Schools) and welcomed this further opportunity to share in an educational venture that should result in meaningful, pertinent and productive learning for a significant number of D. C. high school students.

II. STATEMENT OF WORK

RCA, under Contract No. 0370-AA-NS-N-5-6A, was charged with the performance of the following tasks:

1. Familiarize the career development instructional staff with innovative and relevant curriculum materials and related research materials for possible use in the career center.
2. Continue to direct the writing of learning packages using the model established in phase II.

3. Direct the career development center staff in the writing of learning packages for each program area which will be suitable for implementation in the Career Development Center.
4. Provide curriculum development specialists and curriculum writers to assist in the preparation of materials and to maintain a high quality level.
5. Direct and maintain quality control of all learning packages to assure that each package is written in the format which has been established in phase II.
6. Integrate into the development of learning packages some of the techniques necessary for implementation in the classroom. (These techniques will be written in the direction for the instructions.)

To accomplish these objectives the contractor was to provide 20 man-days of effort over two 1-week periods. The tentative dates suggested in the contract were August 28 through September 3, 1974 and September 4 through September 10, 1974.

III. WORKSHOP DESIGN AND ACTIVITIES

A. Personnel

RCA in fulfilling the contractual obligations assigned the following persons to the project: Dr. Robert D. Cain, Manager, Educational Planning, Mr. W. A. Abrams, Workshop Coordinator; and Dr. Madeline E. Ulibarri, Curriculum Specialist. Mr. Abrams and Dr. Ulibarri were present for the entire two week period while Dr. Cain participated in several sessions during both the first and second weeks.

Those participating in the workshop from the Career Development Center (CDC) were:

Mr. George Gordon, Principal
Mrs. Elizabeth Smith, Assistant Principal
Mr. David Aaronson, Literary Arts
Mr. Warren Brooks, Photography
Mr. Leroy Brown, Printing (Cordoza High School)
Mr. Landers Chaves, Printing
Mrs. Marlene Hoffman, Literary Arts
Mr. Reggie McGee, Graphic Design
Mr. Andrew Richardson, Printing
Mrs. Maxine Rosborough, Architectural Drafting
Mrs. Beverly Russell, Advertising Art

B. Plan of Approach

RCA developed its approach to the Phase III Workshop on the basis of the events which occured in the previous workshops (Phase I and Phase II Contracts). During these workshops RCA laid an educational base and provided technical assistance that would enable the D. C. personnel to develop competency-based curricular materials according to an established format. RCA understood that the participants in the initial two workshops would develop curricular materials or learning packages during the summer of 1974. Also, taken into consideration was the period of time which transpired between the Phase II Workshop (February 25 - March 1, and March 25-29) and the Phase III Workshop which occured five months hence.

On this basis it became apparent that two of the major thrusts of the Phase III Workshop were to assess the quality of curricular materials previously developed and to determine in what areas of curriculum development the participants needed professional assistance. To accomplish this the RCA team developed a set of objectives and a form that permitted each participant to choose what area(s) should be given consideration in determining the objectives and emphases of the workshop. The objectives are listed below and the Participant Goal Setting Form is presented in Figure 1.

1. Objectives
   a. To establish a working relationship between the Washington, D. C. personnel and the RCA team.
   b. To establish the goals of the Phase III Workshop RCA suggests at least three goals should be set. They are:
      1) To determine if any review is needed in the conceptualization and development process for:
         a) Performance Objectives (terminal and enabling)
         b) Learning Activities
         c) Criterion Assessment
      2) To review all curricular materials developed during and after Phase I and II Workshop for:

a) Content Consistency: Are all learning packages consistent with the guidelines and standards previously established?

b) Content Completeness: Do all learning packages have sufficient performance objectives (terminal and enabling), learning activities, and criterion tests to assist the student in acquiring the established competencies?

c) Content Clarity: Are the materials written and arranged in such a manner that the student may clearly comprehend what the objectives are for each learning package, and what he must do (learning activities) to gain the skills (knowledge of, ability to perform, attitude toward) necessary to exhibit (criterion tests) the terminal behavior?

3) To produce at least three complete learning packages. Such packages will be written in the established format.

Figure 1

Name _____

PARTICIPANT GOAL SETTING

Please circle the number adjacent to each item listed below. This is a four point rating scale with "0" indicating very high interest and "3" indicating very low interest in an item.

The workshop would be most helpful to me if time was given to:

1.	Reviewing the development of terminal performance objectives.	0 1 2 3
2.	Reviewing the development of enabling objectives.	0 1 2 3
3.	Reviewing the development of learning activities.	0 1 2 3
4.	Reviewing the development of criterion assessment procedures.	0 1 2 3
5.	Continuing to write curricular materials with individualized assistance from the RCA staff.	0 1 2 3
6.	Other areas (please specify)	0 1 2 3

_____

_____

_____

_____

2. Assessment Activities

Having determined the objectives for the workshop the next step planned by RCA was to assess further the participants understanding of each segment of curricular materials that was to be included in a learning package. Such an assessment is important for several reasons. They are:

a. The assessment would allow the participants to demonstrate their knowledge of competency-based education as applied to the established format.
b. The assessment would permit the participant to avoid spending workshop time in areas of curriculum development where he was already competent.
c. The assessment would reinforce knowledge previously acquired.
d. The assessment would produce instruments that would serve as checklists to evaluate any curricular materials previously developed.

The assessment activities were enacted by dividing the workshop participants into several small groups. Each group was asked to develop a separate checklist for a performance objective, a learning activity, and a criterion test. The checklists were to be instruments that would be used to determine if a performance objective, learning activity, etc. met the standards established in the Phase I and II Workshops. Each group could use any available references in developing each checklist and

RCA personnel would assist when so requested. When a checklist was developed it was to be placed upon newsprint and shared with the entire workshop.

After each group had the opportunity to develop the checklist for performance objectives, the results were discussed and RCA distributed a previously developed checklist for performance objectives. The checklists were then compared and adapted as deemed necessary by the entire group. Such a procedure was to be followed for the development of the checklists for learning activities and criterion tests.

The assessment activities accomplished their intended objectives of isolating the learning needs of the participants and providing instruments by which the learning packages may be evaluated. The materials for these activities are included in Appendix A of this report.

3. Review of Curriculum Format

The final segment in RCA's strategy for orientating the participants was to review the format for learning packages established during the Phase II Workshop. Copies of the format were made available and a general presentation was given on the format and the relationship of the various parts. Several changes were suggested, but were not enacted until later in the workshop. The changes are given later in this report.

The review of the curriculum format also served as a diagnostic and evaluative activity which enable the participant to assess both his own understanding of competency-based curriculum development and any materials written prior to the Phase III Workshop.

C. Program of Activities

Using the approach given above RCA was able to isolate the participant's educational needs and to establish evaluative instruments that would facilitate the assessment of any previously developed learning packages and the development of learning packages during or after the Phase III Workshop. With the identification of participant needs RCA prescribed a program of activities that included both the utilization of materials utilized in previous workshops and materials written for specific use in the current workshop. Each activity was designed to provide a needed learning experience and was prescribed on an individual basis, although such a prescription did not preclude small group activities when more than one participant had a similar need and the rate of learning was apparently equal.

1. Competency-Based Career Education

Since several participants (D. Aaronson, L. Brown, L. Davis, M. Hoffman, R. McGee, B. Russell, and E. Smith) had not attended the previous RCA workshops it was determined that it would be necessary for these persons to gain a basic knowledge of competency-based career education. The RCA team

through oral and visual presentations, and a programmed learning activity (see Appendix B) sought to assist these persons comprehend the following:

- What is competency-based career education
- What are competencies
- How are competencies derived
- What is the relationship between competency-statements and terminal performance objectives

2. Performance Objectives (Terminal and Enabling)

Because therterminal performance objective is the heart of a competency-based system of education and a review of previously developed learning packages showed a weakness in this area, all members of the workshop were asked to participate in the activities on terminal performance objectives (TPO) and enabling objectives (EO). These activities centered upon two programmed learning packets on writing and validating Performance Objectives (PO). The packets, which were employed in Phase II Workshop and are included in Appendix B of this report, provided an information base for both individualized and small group instructions on the development of TPO and EO.

As the members of the workshop comprehended what TPO and EO are, and started to write some in their own areas of content knowledge, they began to realize how competency-based education can be made a reality and why it is important for today's schools.

3. Learning Activities

Once well-delineated and measureable TPO are written the next step in curriculum development is the writing of learning activities. As workshop participants gained the skill of writing TPO and EO they were provided with several learning experiences designed to assist them in being able to determine what types of learning activities should be used with the various TPO and EO, and how to write such activities. The major emphasis in this area were:

- All learning activities should relate directly to the TPO and the corresponding EO.
- All learning activities should actively involve the student and include a response mechanism to assess whether the student is learning.
- Learning activities should be sequential with reinforcement mechanisms included; that is, the student moves from simple to complex behavior with opportunities to replicate earlier acquired skills.
- Learning activities should reflect that students learn in different ways and at different rates.

The materials used to assess the participants understanding of learning activities for competency-based education and to assist the participants in developing the skills required to write appropriate learning activities are in Appendix C.

4. Assessment Instruments

When a member of the workshop was able to write acceptable PO and learning activities, his next objective was to develop the skills necessary to write criterion-referenced tests or assessment instruments. The participants were given materials on writing assessment instruments and individual assignments for the development of such instruments. (The materials on assessment instruments are in Appendix D).

In a competency-based educational system there must be a means of evaluating the student to determine if he is competent to perform the behavior described in the TPO. Since the TPO includes a criteria that describes the level of performance and or the degree of accuracy the student must attain to be considered competent, the tests used in competency-based education are called criterion-referenced tests. Also, because the TPO states what behavior the student must exhibit and lists the conditions and limitations under which that behavior must be replicated, the TPO describes the testing situation. On this basis RCA recommended that both the pretest and the posttest should require the student to replicate the same level and type of behavior stated in the TPO. This meant that one assessment instrument could serve as both the pretest and the posttest. This approach was adopted and followed during the Phase III Workshop.

In assisting the participants in the development of test instruments RCA also provided a format for the instruments. This format is presented and discussed in the next session.

5. Final Format For Learning Packets

The format developed during the Phase II Workshop was reviewed and deemed acceptable except for several changes which are relatively minor. The first alteration was in the wording of the Performance Statement which is part of a TPO. In the Phase II format under Performance Statement was this introductory phrase, "Upon completion of this learning package you will be able to....." It was suggested this phrase be deleted. There are several reasons for this which are:

a. The statement assumes that if a student completes the learning activities he will be able to perform the behavior required by the TPO. For a number of educational reasons this is not always true. Though the majority of students may by completing the learning packages be able to replicate the prescribed behavior, not all students will, and thereby the statement becomes invalid.

b. More importantly, the statement does not account for the fact that a student may receive credit for a TPO by successfully completing a pretest, and thereby, not be required to complete the learning activities in the packet.

c. Most importantly, the statement does not reflect adequately the "must" of a TPO. In competency-based education, a student must perform or replicate the behavior required in the TPO. This is what assures accountability in the system. Credit should only be given when a student does perform according to the specificity enunciated in the TPO.

The second change was alluded to in the preceding section on assessment instruments. This change is that the pretest and posttest be the same for the reasons given above. Also, at this stage in the curriculum development process it provides a simple yet adequate means of evaluation. If at a later stage more time is available and the instructors have enlarged their test writing skills it may be advisable to expand the pretest to include items that will assess not only the behavior to be demonstrated at the TPO level but the various levels of skills set forth in the EO. Such a procedure would increase the diagnostic value of the pretest.

In connection with the assessment instruments RCA recommends that each instrument have two main sections. The first section will be entitled "Instructions" and will relate to the student what he is to do, and provide all necessary information as to supplies, materials, references, answer sheets, etc., that are

to be or may be used in the testing situation. The second section will be entitled, "Evaluation." This will describe the standard or criteria by which the student will be evaluated.

Another minor change in the final format is in the introductory phrase for EO. The phrase was, "To achieve the terminal performance objective for this package you should be able to." The word "should" is changed to "must". The change is made for substantially the same reasons given above for the altering the introductory phrase to the TPO.

A copy of the final format is presented in Appendix E.

6. Special Assistance

At the request of Mr. George Gordon the RCA team provided special technical assistance to Mrs. Maxine Rosborough. Because Mrs. Rosborough displayed a good understanding of the basic concepts of competency-based education (CBE) Mr. Gordon thought it would be valuable if time was given to assist her in developing a presentation on CBE. This presentation was to be given to the entire faculty of the CDC at a time specified by Mr. Gordon. It would provide information for those faculty members not attending the workshop and would help reinforce the skills gained by those who did attend the workshop. Also, the preparation of the presentation sharpened

Mrs. Rosborough's skills in CBE curriculum development and thus provided an on-site person who could continue the impact of the workshop.

IV. PRODUCTS

According to the Article II of the contract RCA was to submit in its final report three examples of completed learning packages per cluster for each of the five content areas of instruction. These areas are:

- Drafting
- Photography
- Printing
- Writing
- Advertising

As is indicated in Section III of the report RCA had prepared to meet and exceed this objective. However, the RCA team through its assessment techniques discovered that most participants were not prepared to develop immediately the finished learning packages because they had not attended the previous workshops. It was then decided by Mr. George Gordon and RCA that making the production of learning packages a top priority would probably prevent the new workshop participants from having sufficient time and opportunity to develop the basic CBE curriculum development skills. The learning packages could have been developed by the RCA team doing most of the writing with the teachers providing only content expertise. This plan was rejected because the workshop participants would benefit little from such a plan.

Instead, a decision was made to allow those attending the workshop to participate to the maximum degree since this would give them the best opportunity to develop a working knowledge of CBE curriculum development, as is described in section III of this report. This is the course that was pursued.

Such a course of action did not produce the total number of learning packages required in the contract, yet as is evident in the case of Mrs. Rosborough, something more important was produced, namely, a solid understanding of the basics of CBE from which professional growth may occur. However, the results of the workshop were not just in professional development, Appendix F contains ten learning packages that resulted from the workshop.

V. RECOMMENDATIONS

RCA from its experience in education believes that a well-designed curriculum along with knowledgeable competent teachers is critical if schools are to meet the educational needs of this present generation of students. It is evident that the Washington School System shares this belief by its decision to begin the Lemuel Penn Career Development Center and by its action in holding three workshops in CBE curriculum planning and development. These workshops have enabled administrators and teachers to gain a basic working knowledge of CBE and to begin the process of developing a well-designed curriculum. This has been a bold step in the right direction. To continue this pursuit of providing meaningful and relevant

education for the high school students of Washington, D.C., RCA would suggest that definite plans be adopted to ensure that this quest become a reality. These plans should include additional workshops so that the teachers at the Penn Career Development Center could continue to develop their professional expertise in both curriculum development and implementation.

Such workshops may be conducted in at least two ways. One way would be to hold a series of monthly two-day workshops during 1974 and 1975. A second method would be to hold several five-day workshops between now and June, 1975. Whether these suggestions or another way is adopted the most important factor is the decision to act promptly on this matter in order not to negate in any way the good beginning that has been made.

Because of RCA's involvement in the three workshops and its solid expertise in curriculum development and implementation, it would welcome an opportunity to discuss the planning and implementation of these workshops.

Appendix A

Behavioral Objective	Handout
Behavioral Objective	Checklist
Learning Activity	Handout
Learning Activity	Checklist
Assessment Instrument	Handlist
Assessment Instrument	Checklist

Handout: PERFORMANCE OBJECTIVE CHECKLIST

Working with the other members of your assigned group and using any available references develop a checklist for determining if a performance objective meets the standards established in the Phase I and II Workshops. If you have any questions or need assistance, please consult a member of the RCA staff.

PERFORMANCE OBJECTIVE CHECKLIST

Course: _____ Module No. _____

Content Person: _____ Objective No. _____

Directions:

This checklist is to be completed for each objective which is developed by a conference participant. After you have checked your performance objective, submit the completed checklist to a member of your group. That member will review the objective and return the checklist to you with the objective with appropriate comments.

	Yes	No	N/A
Performance Statement:			
All Performance Statements should:			
1. State what task the student must perform.			
2. State the behavior in the standard terminology of the career area.			
Conditions and/or Limitations:			
All Conditions and/or Limitations should:			
1. State the time allowed to complete the task.			
2. State references which may or may not be used.			
The following elements may be contained in the Conditions and/or Limitations to help clarify the objective:			
1. States specific equipment or classification of equipment which may or may not be used. (All objectives requiring psychomotor skills should contain this element; cognitive/affective may include this element.)			
2. States if the student will be given a sample assignment or exercise sheet.			
3. States if and when the student will be given a performance or product evaluation scale.			

	Yes	No	N/A
4. States other limitations unique to the cluster or task.			
5. States conditions or limitations located elsewhere (prior objectives, modules, Student Learning Plans, or supportive material).			
6. States location of performance. (Must be included if task is to be performed in location other than regularly assigned cluster areas. May be included for those tasks to be performed in regularly assigned cluster areas.)			
Criteria of Acceptance:			
All Criteria of Acceptance sections must:			
1. Be congruent with Performance Statement and Conditions and/or Limitations.			
2. State the standard for judging the behavior (list of criteria, chapter or page of an authoritative source, instructor checklist, etc.).			
The following elements may be contained in the Criteria of Acceptance to help clarify the objective:			
1. States the number or range of numbers of total responses required. (Applies primarily to cognitive objectives.)			
2. States the percentage of total responses that must be answered correctly. (Applies primarily to cognitive objectives.)			
3. States who will judge or evaluate the performance. (Must be included in all objectives requiring more than the use of an answer key for assessment.)			

Explain in detail:

_____

_____

_____

_____

Handout: LEARNING ACTIVITIES CHECKLIST

Working with the other members of your assigned group and using any available references, develop a checklist for determining if the learning activities in a learning package meet the standards established in the Phase I and II Workshops. If you have any questions or need assistance, please consult a member of the RCA staff.

LEARNING ACTIVITIES CHECKLIST

Below are listed the guidelines that are applied in assessing the learning activites of CBE materials. One of the activities of this workshop will allow participants to add to this list. Please add these additional guidelines in the blank spaces. This checklist will be used by you and the RCA staff in evaluating the learning activities you have written before this workshop.

	Yes	No	N/A
1. Are learning activities supportive and congruent with the performance objective?			
2. Do learning activities demonstrate an awareness that students have various learning styles and a divergence of learning abilities? (i.e. an activity may be completed in more than one mode).			
3. Are the learning activities practical for a public educational setting?			
4. Do the learning activities actively involve the student?			
5. Are the learning activities in the proper sequence? (i.e. Does knowledge proceed performance? Does the student move from the simple to the complex?)			
6. Do the learning activities provide for en route, analogous, and equivalent activities?			
7. Are there ways or methods for checking the students progress?			
8. Are the learning activities written in terminology that is in accord with the vernacular of the industry or profession for the career cluster?			

	Yes	No	N/A
9. Do the learning activities clearly state what the student is to do?			
10. Are the learning activities written on a reading level appropriate for students at the secondary level?			
11. Are the reading and nonreading references and resources supportive, and on a reading or verbal comprehension level appropriate for learners at the secondary level?			
12. _____			
_____			
_____			
13. _____			
_____			
_____			
14. _____			
_____			
_____			
15. _____			
_____			
_____			

Handout: CRITERION ASSESSMENT CHECKLIST

Working with the other members of your assigned group and using any available references, develop a checklist for determining if a criterion test meets the standards established in the Phase I and II Workshops. If you have any questions or need assistance, please consult a member of the RCA staff.

ASSESSMENT INSTRUMENT CHECKLIST

Below are listed the guidelines that are applied in evaluating various aspects of CBE assessment instruments. One of the activities of this workshop will allow participants to add to this list. Please add these additional guidelines in the blank spaces. This checklist will be used by you and the RCA staff in evaluating the assessment instruments you have written before this workshop.

	Yes	No	N/A
1. Does the assessment instrument measure what it purports to measure?			
2. Is the assessment instrument free of ambiguities, faulty structure, or give-away responses?			
3. Does each assessment instrument reflect the appropriate level of difficulty as specified in the performance objective?			
4. Does the assessment instrument demonstrate good grammatical construction (i.e., verb tense, number, spelling, etc.)?			
5. Is the assessment instrument written in terminology previously learned by the student?			
6. Does the assessment instrument clearly specify what response is to be elicited?			
7. Does the assessment instrument measure representative behaviors specified in the performance objective?			
8. Does the assessment instrument clearly inform the student under what conditions he is to perform, and by what standard his performance will be evaluated?			

	Yes	No	N/A
9. Is the assessment instrument so written and arranged that it will serve as a diagnostic tool for both the trainee and instructor?			
10. Is the assessment instrument usable in a public educational setting?			
11. _____			
12. _____			
13. _____			
14. _____			
15. _____			

Appendix B

Programmed Learning Activities

1. Competency
2. Writing Performance Objectives for Instruction
3. Validating Performance Objectives for Instruction

COMPETENCY-BASED EDUCATION

Instructions for Taking the Lesson

As you work through this lesson, fill in the blank(s) with the word(s) of your choice. At the end of the lesson, you will be given the answers with which to check your responses. Should one of your responses not correspond, reread the information until it is clear to you why the indicated answer is correct. There is no time limit; work at your own comfortable rate of speed.

Now turn the page and begin the lesson.

1. Competency-based education (CBE) programs are not new but rather apply a new combination of techniques to meet situations which currently exist in education.

   CBE programs represent _____ approaches to existant (old) educational situations.

2. New approaches to existing situations become more pupular if they are successful. CBE programs have been successful.

   Part of the new thru st related to CBE programs is due to the _____ of existent CBE programs.

3. One way to recognize a CBE program is by the existence of goals stated as competency statements.

   Competency statements represent the _____ of a CBE program.

4. The goals of CBE, competency statements, reflect what it takes to succeed (be competent) in a given field.

   What it takes to succeed (be competent) is called a _____ _____ in a CBE program.

5. Competency levels, as expressed in competency statements, are determined by analyzing conditions as they exist, <u>not as they should exist</u>.

   According to the statement above, which one of the following is a competency statement for a school teacher? Indicate your choice by using a check mark (√).

   _____ a. "Maintains classroom discipline."

   _____ b. "Does not use corporal punishment with students."

   Obviously <u>a</u> is a competency statement because it states conditions as they exist, while <u>b</u> states conditions as someone believes they <u>should</u> exist.

1. Competency-based education (CBE) programs are not new but rather apply a new combination of techniques to meet situations which currently exist in education.

   CBE programs represent _____ approaches to existant (old) educational situations.

2. New approaches to existing situations become more pupular if they are successful. CBE programs have been successful.

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   Competency statements represent the _____ of a CBE program.

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   _____ b. "Does not use corporal punishment with students."

   Obviously <u>a</u> is a competency statement because it states conditions as they exist, while <u>b</u> states conditions as someone believes they <u>should</u> exist.

6. In CBE programs, competency statements are translated into performance objectives (POs).

   POs are written for _____ _____ in CBE programs.

7. POs communicate what the student must do to demonstrate competency.

   If you were to look at something which would tell you what a student in a CBE program must do to demonstrate competency, you would look at a _____ _____.

8. POs are written using the competency levels reflected in competency statements.

   Competency levels reflected in competency statements in CBE programs are used in writing _____ _____.

9. In most CBE programs, POs communicate three pieces of information: <u>what</u> the student is able to do, the <u>conditions</u> under which he must perform, and how well (to what <u>standards</u>) he must perform.

   An acceptable PO for a CBE program communicates the following:

   a. w_____ a student must do

   b. the c_____ under which the student is to perform

   c. the s_____, or how well the student must perform

10. Read the following statement. "Using a power vacuum cleaner, you will clean hallway carpets so that no foreign material is visible."

    This statement is a performance objective because it states w_____ you must be able to do, the c_____ under which you will perform, and the s_____ for your performance.

11. One of the assumptions underlying CBE programs, and the use of competency statements and performance objectives, is that each student must achieve competency level.

    In CBE programs, _____ student must achieve competency level.

12. "To achieve competency level" means to perform as indicated in a PO.

    If a person performs as indicated in a PO, he has achieved _____ level.

13. Another assumption underlying CBE programs, and the use of competency statements and performance objectives, is that the time taken to achieve competency level will vary from student to student.

    The _____ needed to achieve competency level varies from student to student.

14. Read the following statement. "Using an electric typewriter, you will be able to type 'front newspaper page' copy at the rate of 40 words per minute with a maximum of three errors."

    a. Underline the portion of the statement that is the competency level.

    b. If you were teaching a course in typewriting, would the following be acceptable performance? "Ability to type 'front newspaper page' copy at the rate of 50 words per minute with a maximum of ten errors."

       yes no (Circle one.)

    Again, if you were teaching a course in typewriting, would you expect everyone to be able to perform as stated above after eight hours of practice?

       yes no (Circle one.)

15. In CBE programs, tests are used as a "check" on competency level.

    To check whether a student has a _____ you would use a test.

16. Most CBE programs use pretests. Pretests indicate what competencies a student has before training begins.

    To check what competencies a student has before training begins, you would use a _____.

17. Most CBE programs use posttests. Posttests indicate what competencies a student has after he has completed a "period" of training.

    To check what competencies a student has after a "period" of training, you would use a _____.

18. All evaluation procedures (pre - and posttests), in CBE programs, are criterion referenced.

    "Criterion referenced" refers to _____ in CBE programs.

19. "Criterion referenced" means that the pretests and posttests are written according to the standards in the PO.

    The standards in the PO represent the _____ used in the pretests posttests in CBE programs.

20. Read the following statement. "Using the latest edition of Webster's Collegiate Dictionary, you will be able to divide a list of ten business terms into syllables. Each word must be divided correctly."

    a. If you were going to check whether a student has the competency listed above before he begins training you would give a criterion-referenced _____.

    b. If you were going to check whether a student has the competency listed

above after he completes a period of training, you would give a criterion-referenced _____.

c. The criterion in the statement above is that each of the ten business terms must be correctly divided into syllables. Therefore, both the pre-test and the posttest would require that the student correctly divide _____ business terms into syllables.

21. So far we have identified the following main elements of CBE programs:

- Competency statements - goals of a program; what it takes to succeed in a given field; arrived at by analyzing existing conditions.
- Performance objectives - written from competency statements, communicate what a student should do, the conditions under which he should perform, and the standards for his performance.
- Criterion-referenced tests - both pre-and posttests, written from criterion levels in performance objectives.

If you write the goals of a CBE program from analyzing existing conditions to determine what it takes to succeed, you are writing _____ _____.

If you write pre - and posttests from criterion levels contained in performance objectives, you are writing _____ - _____ tests.

If you write performance objectives they should specify _____ the student is to do, the _____ under which he is to perform, and the _____ for the student's performance.

22. Most CBE programs contain written training activities for the student.

    Written _____ _____ for students are provided in CBE programs.

23. Learning activities represent the steps students must perform to get to the criterion (competency) level specified in a PO.

    To get to the criterion (competency) level specified in a PO, the student must complete certain steps known as _____ _____.

24. Learning activities are written in a sequence to help students progress in an orderly and relevant manner.

    Learning activities must lead the student toward criterion (competency) levels in an orderly and relevant manner. Therefore, they are written (placed) in a _____.

25. Remember, an important aspect of CBE programs is that each student must reach criterion (competency) level. Therefore, proceeding on the assumption that individual students learn in various ways, alternate learning activities are often written.

    Alternate learning activities are often written because individual students learn in _____ ways.

ANSWER KEY FOR
CBE

1. new
2. success
3. goals
4. competency statement
5. ✓ a.
6. competency statements
7. performance objective
8. performance objectives
9. what
   conditions
   standards
10. what
    conditions
    standards
11. each
12. competency
13. time
14. a. rate of 40 words per minute with a maximum of three errors
    b. no
    c. no
15. competency
16. pretest
17. posttest
18. tests
19. criteria
20. a. pretest
    b. posttest
    c. ten
21. competency statements
    criterion - referenced
    what, conditions, standards
22. learning activities
23. learning activities
24. sequence
25. various

WRITING PERFORMANCE OBJECTIVES FOR INSTRUCTION

Instructions for Taking the Lesson

As you work through this lesson, fill in the blank(s) with the word(s) of your choice. At the end of the lesson, you will be given the answers with which to check your responses. For those that do not correspond, read the information again until it is clear to you why an indicated answer is correct. There is no time limit; work at your own comfortable rate of speed.

Now turn the page and begin the lesson.

1. The defining of objectives is a must for successful teaching.

   One of the requirements for successful teaching is the _____ of objectives.

2. Educational objectives are statements of the aims or goals of a unit or segment of the educational process.

   Aims or goals of education are stated as educational _____.

3. Teaching objectives are written in terms of what the teacher will try to do.

   Objectives stating or describing aims or goals for the teacher are _____objectives.

4. Performance objectives are written in terms of what the student will be able to do at the conclusion of a learning module.

   The aims or goals for student achievement are stated as _____ objectives.

5. "I will teach the students the importance of electrical safety."

   This goal or aim is written in terms of what the teacher will try to do; hence, it is a _____objective.

6. "The student will be able to observe electrical safety rules while repairing home appliances."

   This objective is written in terms of what the student will be able to do; hence, it is a _____objective.

7. A performance objective should not be confused with a learning activity. A learning activity is a step to employ in the realization of a performance objective.

   A step to take in the attainment of a performance objective is a _____ _____.

8. Performance objectives are the goals of the various learning activities.

   Learning activities are steps to take in reaching _____.

9. "The class will take a field trip to a local printing shop."

   This statement describes an activity for the class; hence, it is a step toward realization of a performance objective and is classified as a _____.

10. "The class members will be able to take part in a discussion of the role of communication in our modern economy."

    This is a statement of what students will be able to do, possibly after a field trip; hence, this is a _____.

11. For review of this point, study these statements and make responses as indicated:

    a. "Teach students to figure board feet."

       Since this statement is in terms of a goal for the teacher, it is a _____objective.

    b. "Students will do the practice exercises on calculating board feet on pages 267-273 of the text."

       This statement describes an activity or step to be used in reaching a performance objective. It is therefore a _____.

12. Before other points are presented in this program, let's check your understanding of the differences in the concepts of performance objectives, teaching objectives, and learning activities.

    a. A teaching objective is written in terms of what the _____ will try to do, whereas a performance objective is written in terms of what the _____will be able to do at the unit's conclusion.

    b. The aims or goals for student achievement are stated as _____ _____. As a teacher strives to have students achieve these goals, he will have the students take part in various steps to learning called _____.

13. A learning module will be given direction if planning begins with the writing of performance objectives that are clear and well constructed.

    Clear performance objectives give a learning package _____.

14. The teacher will find it easier to determine necessary subject matter content for a learning module by establishing clear performance objectives.

    Performance objectives help to determine a learning module's _____.

15. Methods or procedures to be used in a learning module are more easily established if the teacher has clear performance objectives as a basis of planning.

    Performance objectives help to determine teaching _____.

16. Many of the materials needed to effectively learn can be determined by studying the performance objectives for the learning module.

    A study of the performance objectives for a learning module can reveal many of the needed teaching _____.

17. Methods of evaluation are also indicated by the performance objectives.

    Since the performance objectives are written in terms of what the student or learner will be able to do, these performance objectives provide guidelines for methods of _____.

18. The content, methods, materials and evaluation portions of a learning module will be determined by the instructional learning objectives for the module.

    The performance objectives for a learning module, if clearly stated, will determine the module's _____, _____, _____, and _____.

19. Competency statements are written in terms of the learner's terminal behavior, and come under two classifications, career (job-specific) and knowledge (academic).

    The two classifications of competency statements are _____ and _____.

20. Competency statements can serve the important functions of establishing the broad framework for curriculum planning and of establishing a basis for specific planning in constructing learning modules.

    The initial plans and the broad framework for the creation of learning modules and curriculum plans can be established through _____ _____.

21. While competency statements serve as a guide in establishing a broad framework for planning, performance objectives are the ones that are the most useful in determing instructional content, methods, materials, and evaluation.

    Performance objectives are more detailed than _____ _____ and therefore are more useful in determining instructional content, methods, materials, and evaluation.

22. A performance objective is a statement which describes aims or goals in terms of measurable terminal behavior of the student after he will have completed various learning activities.

    A statement that describes measurable terminal desired student behavior is a _____ objective.

23. A performance objective is quite often referred to as a behavioral objective. The two terms are interchangeable.

Another name for a performance objective is a _____ objective.

24. A performance objective must be written in terms of student behavior. This means that the objective describes a goal for student achievement.

A performance objective must describe student achievement goals and must therefore be written in terms of _____ _____.

25. Performance objectives must be written in terms of terminal student behavior. This means that the objective describes what the student will be able to do after he has experienced various learning activities.

Since a performance or behavioral objective describes what a student will be able to do at the conclusion of a learning sequence, the objective is said to be written in terms of _____ student behavior.

26. Another requirement for a behavioral objective is that it be measurable, or at least observable. This means that the objective should be written in such a way that a means of evaluation of student achievement is evident.

A performance or behavioral objective should provide means for student evaluation; therefore, it must describe a _____ student behavior.

27. Now study the definition of a performance or behavioral objective again. "A performance objective is a statement which describes aims or goals in terms of measurable terminal behavior of the student after he will have completed the learning activities."

a. Since the objective must provide a means for evaluation of the student, it must be written to describe a _____ behavioral goal.

b. Because a performance objective describes goals for the conclusion of the package, it must be written to describe a _____ goal.

c. A performance objective describes a goal for student achievement; therefore, it is written in terms of _____ behavior.

d. Another name for performance objectives, because of their student behavior orientation, is _____ objectives.

28. The quality of instruction can be improved through the writing of performance objectives because they allow for more appropriate evaluation procedures, a better selection of learning activities, and an improved quality of goals for the learner.

Performance or behavioral objectives can be used to improve the quality of instruction because they help to provide:

a. A better selection of learning _____.
b. More appropriate procedures for _____.
c. Higher quality student or learner _____.

Teachers should learn to write performance objectives in terms of measurable terminal student behaviors because they give direction to the learning process and tend to improve the _____ of _____.

29. Often general instructional objectives are written to describe student achievement in terms of understanding, appreciating, knowing, and comprehending. These are conceptual abstrations that in themselves are difficult to measure.

Objectives that describe a behavior that is difficult to measure such as understanding, appreciating, knowing, and comprehending are usually classified as _____ objectives.

30. "The students will develop an appreciation of the music of Chopin and Bach."

This objective is stated in terms of goals of the teacher for the student when the module is completed. It is clear and concise. But is the development of an appreciation a behavior, and is it measurable? (yes or no)_____.

Because this objective is not stated in terms that describe measurable terminal student behavior, it is not a performance or behavioral objective. It must be classified as a _____ objective.

31. "After studying classical music, the student will be able to write a short comparison of the musical stylings of Chopin and Bach."

Think about these questions: Is the above objective stated in terms of what the student will be able to do at the conclusion of the learning module? Is the writing of a comparison a behavioral act and can it be measured or evaluated?

You should have mentally answered these questions with an affirmative answer. The objective as stated then meets the requirements for a behavioral or _____ objective.

32. Based on what you have learned by working through the programmed lesson to this point, classify each of the following objectives as general (G) or performance (P). Keep in mind the necessary definitive requirements of a performance objective.

___ a. "The student will be able to draw the basic floor plans of a modern residential dwelling."

___ b. "The student will be able to construct an end table and properly apply a stain and finish to it."

___ c. "The student will comprehend why good nutrition is important."

___ d. "The student will be able to photograph food displays for advertising purposes."

___ e. "The student will be able to appreciate the creations of prominent apparel designers of the 20th Century."

___ f. "The student will be able to write a performance objective in terms of terminal student behavior that is measurable."

___ g. "The student will know the differences between general and performance objectives."

___ h. "The student will be able to write a performance and a general objective and orally discuss their differences.

___ i. "The student will be able to select behavioral objectives from a mixed list containing general and performance objectives."

(Note: If you responded incorrectly to more than two of the nine classification choices, or if you do not understand why some objectives were classified as they were, turn back to numbers 21, 23, 29, 30, 32, 33, and 34 for review.)

ANSWER KEY

1. defining
2. objectives
3. teaching
4. performance
5. teaching
6. performance
7. learning activity
8. performance objectives
9. learning activity
10. performance objective
11. a. teaching
    b. learning activity
12. a. teacher - student (learner)
    b. performance objectives - learning activities
13. direction
14. content
15. methods (procedures)
16. materials
17. evaluation
18. content - methods - materials - evaluation
19. career - knowledge
20. competency statements
21. competency statements
22. performance

23. behavioral

24. student behavior

25. terminal

26. measurable

27. a. measurable
    b. terminal
    c. student
    d. behavioral

28. a. activities
    b. evaluation
    c. goals

29. general

30. no - general

31. performance

32. a. P
    b. P
    c. G
    d. P
    e. G
    f. P
    g. G
    h. P
    i. P

INSTRUCTIONS FOR TAKING THE LESSON

As you work through this lesson, fill in the blank(s) with the word(s) of your choice. Then following completion of the lesson, you can check your responses by use of the answer key which will be provided at that time. Should one of your responses not correspond with the answer, re-read the information again until it is clear to you why the indicated answer is correct. There is no time limit; work at your own confortable rate of speed.

Now turn the page and begin the program.

1. Competency statements can serve the important functions of establishing the broad framework for curriculum planning and of establishing a basis for specific planning in constructing learning packages.

   The initial plans and the broad framework for the creation of learning packages and curriculum plans can be established through _____ _____.

2. While competency statements serve as a guide in establishing a broad framework for planning, the performance objectives are the ones that are more useful in determining unit content, methods, materials, and evaluation techniques.

   Performance objectives are more detailed than _____ _____ and are threfore more useful in determining the content, methods, materials, and evaluation techniques for learning packages.

3. Before continuing with this lesson, which is a comprehensive study of performance objectives and how to determine their validity, be sure that you understand the basic differences between competency statements and performance objectives.

   a. If a teacher wishes to establish very broad aims or goals to serve as a framework for a unit or curriculum, he will develop _____ _____.

   b. If a teacher wishes to establish objectives that will aid in determining the content, method, materials, and evaluation techniques for learning packages, he will write _____ objectives.

4. The first requirement of a valid objective is that it meet the criteria of a performance objective: "A behavioral or performance objective is a statement which describes aims or goals in terms of measurable or at least observable, terminal behavior of the student."

   For an objective to be valid, it must first conform to the definition of a performance objective by being written in terms of m_____, t_____, s_____, b_____.

5. Test the validity of the following objectives on the basis of their being competency statements or performance objectives. Label them "competency (C)" or "performance (P)" in the space provided, keeping in mind the definitive requirements of a performance objective.

   a. _____ "The student applies his awareness of the importance of the democratic process to committee problem solving."

   b. _____ "The student employs the steps necessary to a motion as presented in Roberts' Rules of Order."

   c. _____ "The student will clean his brushes after every laboratory."

d. _____ "The student will develop good habits relating to his nutrition as evidenced by his selection of foods in the school cafeteria that provide for a well balanced diet."

e. _____ "The student will be able to use the facilities and services of the school library as evidenced by the footnote and bibliographic entries in his research-paper assignment.

Note: If the information presented in the beginning pages of this programmed lesson is not completely clear, or if you feel that you need additional training in recognizing performance objectives, you will benefit by referring to the first in the series of these programmed lessons, "Writing Performance Objectives for Instruction."

6. In addition to competency statements and performance objectives, a three-category taxonomy is used to classify the objectives.

   The three-level classification system used to specifically classify behavioral or performance objectives is called a _____.

7. Three descriptive classifications called "domains" are used in the taxonomy of objectives.

   The taxonomy is divided into classifications of three types or_____.

8. The three domains of the taxonomy of objectives are the cognitive, the affective, and the psychomotor.

   The classifications of cognitive, affective, and psychomotor make up the objective taxonomy's _____ domains.

9. The terminal behavior described as a goal for the student in a performance objective determines the domain classification for that objective.

   The domain classification for a performance objective is determined by the stated goal for the student's terminal _____.

10. The cognitive domain includes behavioral goals that describe how a person thinks--his concepts or his mental achievement relating to the acquisition and use of knowledge.

    Objectives that describe a student's achievement in the area of mental behavior related to the use of knowledge are classified in the taxonomy of educational objectives in the field of concepts or the _____ domain.

11. The affective domain covers those objectives that describe how a person feels and is used to classify measurable or observable achievements relating to values, attitudes, and appreciations.

    The classification that includes appreciations, values, and attitudes is known as the _____ domain.

12. Objectives that describe action or how a student does something are classified in the psychomotor domain. This is the domain sometimes referred to as the "skill" classification.

    Objectives that describe an action or the development of a student skill are classed in the _____ domain.

13. Review the three domains, or areas, of the taxonomy for classifying objectives:

    a. The ability to gain and use concepts is stated behaviorally in the cognitive domain.

    b. The objectives for values and attitudes are stated behaviorally in the affective domain.

    c. The goals for the student to develop skills are stated behaviorally in the psychomotor domain.

    a. The cognitive domain includes behavioral objectives concerning _____.

    b. The affective domain includes behavioral objectives concerning values and _____.

    c. The psychomotor domain includes behavioral objectives concerning the development of _____.

14. Study this objective: "The student will be able to describe in writing the plot, the setting, and the main character in five of Mark Twain's literary works."

    Because the ability to write this paper will depend on the student's understanding of certain concepts of knowledge, this objective is classified in the _____ domain.

15. Read carefully this objective: "The student will be able to construct a cedar chest, using only simple tools."

    Since the ability to construct the chest will depend largely on the student's development of skills in using woodworking tools, this objective is classified in the _____ domain.

16. Now, how about this one? "The student will develop a high degree of self-confidence as evidenced by his willingness to at least attempt new and challenging projects."

    Because self-confidence is an attitude, this objective is classified in the _____ domain.

17. While you are asked to classify objectives as being in a specific domain, it should be noted that in practice the three domains do not always appear in isolation. They often overlap within objectives and support each other in the teaching process.

In the space provided, classify the following objectives as being in either the "cognitive (C)", the "affective (A)", or the "psychomotor (P)" domain of our objective taxonomy.

a. _____ "The student will be able to list the major copper-producing countries of the Western Hemisphere."

b. _____ "The student will be able to paint a landscape employing proper techniques of either tempera painting or oil painting."

c. _____ "The student will be able to evaluate his own written compositions using a teacher-prepared rating scale."

d. _____ "The student will develop an appreciation of the value of promptness as evidenced by his fulfillment of obligations within the allotted time and by his attendance behavior."

e. _____ "The student will be able to type seventy words per minute with a maximum of two mistakes when copying prepared material."

f. _____ "The student will develop a sense of respect for the democratic process as evidenced by his participation in activities of of student government and in student elections."

g. _____ "The student will be able to define orally and use in conversation the theatrical terms of the Greek and Roman eras."

Note: It is to be expected that some objectives will fall in a "grey" area and it will be difficult to classify them in one specific domain.

18. For review, consider these statements about the objectives stated in number 17.

Objectives a, c, and g state behavioral goals in the cognitive domain because listing nations, evaluating compositions, and defining and discussing terms all involve concepts or knowledge.

Objectives b and e state behavioral goals in the psychomotor domain because painting and typing both involve action or skills.

Objectives d and f state behavioral goals in the affective domain because the development of an appreciation and of a sense of respect both involve attitudes and values.

19. The understanding of the three categories of the taxonomy of instructional objectives is important to the valdating of objectives. A variety of the different types should be included in the listed objectives for a teaching package.

    Valid performance objectives for a package should include objectives that provide for a _____ of behavioral goals.

20. When writing performance objectives, we often unconsciously overemphasize one domain and de-emphasize the others.

    Often objectives lack variety of behavioral goals because of a tendancy to unconsciously de-emphasize two of the domains and _____ the other.

21. Too frequently when a list of performance objectives is studied, it is discovered that the cognitive domain has been given primary importance in determining behavioral goals for the students.

    There is a tendency for performance objectives to lack variety because of an overemphasis of the _____ domain.

22. There is no intent to imply that the cognitive domain should not be used in writing objectives for instruction, or that objectives describing behaviors based on knowledge and concepts should be declared invalid.

    However, objectives for a learning package should be examined carefully to determine if only one area or _____ of student achievement has been considered.

23. The cognitive domain assumes added importance in writing and validating performance objectives if the six levels of objectives within the domain are considered.

    The cognitive domain consists of _____levels of objectives.

24. The first, or lowest, level of objectives in the cognitive domain is limited to a knowledge orientation. Objectives written on this level relate to the student's ability to recall information.

    The cognitive domain has at its lowest level objectives relating to the student's ability to _____ information and is _____ -oriented.

25. The understanding of information and the ability to make use of materials are the objectives of the second level of the cognitive domain. This is known as the comprehension level.

    The second level of the cognitive domain is the _____ level and encompasses objectives directed at the student's ability to make use of materials and his _____ of information.

26. The next level of the cognitive domain is the application level. Objectives written on this level relate goals to the student's ability to see and apply abstrations.

The cognitive domain's third level is the _____ level and treats those objectives relating to the student's ability to see and apply _____.

27. Analysis is the next level in the cognitive domain. This level has objectives centered in the student's ability to study and understand segments of information or materials apart from the whole.

Objectives relating to the student's ability to isolate segments of information or materials come under the cognitive domain and are at the _____ level.

28. Synthesis refers to the act of pulling parts together in relationship to one another. Objectives relatin gto developing the student's ability to do this are in the fifth--the synthesis--level of the cognitive domain.

The level in the cognitive domain that includes objectives directed at the student's ability to pull information together and to determine relationships is known as the _____ level.

29. The highest level in the cognitive domain is evaluation. The instructional objectives written on this level call for development of the student's ability to make value judgments.

The highest level of the cognitive domain concerns the ability to make value judgments and is known as the _____level.

30. Look now at the six levels together to get them in their proper perspective. Fill in the blanks with the level of the cognitive domain called for. These are listed in reverse order, from the highest level to the lowest.

(6) _____ value judgments

(5) _____ pull together; establish relationships

(4) _____ take apart and study segments in depth

(3) _____ apply knowledge; see abstrations

(2) _____ understandings; make use of knowledge and materials

(1) _____ recall information

31. Classify the following objectives as being in the higher or lower level of the cognitive domain. The higher level includes objectives on the comprehension, application, analysis, synthesis, and evaluation levels. The lower level includes only those objectives on the knowledge level.

    a. _____ "The student will be able to list the titles and authors of ten major works in Spanish literature."

    b. _____ "The student will be able to utilize the necessary elements of blank verse poetry as evidenced in his writing of an original poem."

    c. _____ "The student will be able to test the validity of listed performance objectives by using a list of six criteria."

    d. _____ "The student will be able to state orally the definition of a performance objective."

    e. _____ "The student will be able to determine and state the motivation of the authors of pamphlets published by the John Birch Society, the American Legion, and the Department of Agriculture."

32. In validating the performance objectives for a package, we should not demand nor expect objectives for each of the six levels of the cognitive domain. We should, however, be watchful that the higher level has been applied and that there is not overemphasis on the lower--knowledge--level.

    Both in writing and in validating performance objectives, an important consideration is the inclusion of objectives in the cognitive domain that are on the _____ level.

33. The validity of an objective in terms of worth to the student is the final and most important evaluation criterion. Trivia should be avoided.

    The most important consideration in testing the validity of a performance objective is its worth to the _____.

34. Presented below are the criteria to employ in validating performance objectives for instruction. Study them carefully.

    a. Are they written in terms of what the student will do? (behavior)

    b. Do they indicate terminal goals for the student?

    c. Are they stated in terms of student behaviors that can be measured, or at least observed?

    d. Do the objectives reflect a variety of desired behaviors in the cognitive, affective, and psychomotor domains.

e. Do the cognitive-domain objectives reflect behavioral goals on the higher level, not just knowledge recall?

f. Are the objectives valid in terms of worth to the student?

35. On the following page, space has been provided to allow you to practice writing valid performance objectives for instruction. Follow these directions:

a. Write objectives for your own subject matter field or area of responsibility.

b. Write one competency statement to give you direction and guidelines.

c. Write four performance objectives to go with the competency statement.

(1) Write one objective for each of the three domains.

(2) Include two objectives in the cognitive domain, one of which is at the higher level.

d. Test the validity of your objectives by applying the six criteria presented in number 34.

Note: Refer back to any portion of this lesson that you wish, both as you write objectives for practice and as you validate them.

OBJECTIVE WRITING
PRACTICE SHEET

Subject Matter Field or Area of Responsibility: _____

Competency Statement: _____

_____

_____

_____

_____

Performance Objectives:

Cognitive Lower: _____

_____

_____

_____

Cognitive Higher: _____

_____

_____

_____

Psychomotor: _____

_____

_____

_____

Affective: _____

_____

_____

_____

Now mentally test the validity of your objectives by applying the six criteria presented in number 34.

ANSWER KEY

1. competency statements

2. competency statements

3. a. competency statements
   b. performance

4. measurable, terminal, student, behavior

5. a. C
   b. P
   c. P
   d. P
   e. C
   F. P

6. taxonomy

7. domains

8. three

9. behavior

10. cognitive

11. affective

12. psychomotor

13. a. concepts
    b. attitudes
    c. skills

14. cognitive

15. psychomotor

16. affective

17. a. C
    b. P
    c. C
    d. A
    e. P
    f. A
    g. C

18. --

19. variety

20. overemphasize

21. cognitive

22. domain

23. six

24. recall - knowledge

25. comprehension - understanding

26. application - abstrations

27. analysis

28. synthesis

29. evaluation

30. (6) evaluation
    (5) synthesis
    (4) analysis
    (3) application
    (2) comprehension
    (1) knowledge

31. a. lower
    b. higher
    c. higher
    d. lower
    e. higher

32. higher

33. student

34. --

35. --

Appendix C

Principles of Writing Learning Activities

Learning Module 04

Principles of Writing Learning Activities

Writing learning activities is perhaps the most creative section of the learning module. The learning activities allow the student flexibility in terms of how he will proceed in accomplishing the enabling performance objectives and ultimately in attaining the terminal performance objective for the module. Concurrently, the learning activities present a series of events in which an instructor may vary his teaching method to accommodate the diversity of needs that students have in the learning process. As previously mentioned, the primary purpose of the LM is to individualize instruction so that the student is able to identify his performance objectives, progress basically at his own rate, identify his strengths and weakness through criterion assessment, recycle when objectives are not achieved, and progress to the next objective or module when ready. Thus, with well-defined objectives a set of learning activities can be written for students and instructors to follow in attaining each enabling performance and the terminal performance. From experience we know that alternate learning activities can be designed whereby a student can choose the method by which he can best learn. In preparing a basic set of learning activities, an instructor should be able to provide at least two options and possibly more for the learner to attain any one enabling performance objective. For example, if the instructor presented a lecture-demonstration to the class, he could also, with little effort, come up with a reading alternative for a student who could not learn by merely listening and observing the demonstration. Obviously the more media that are available for integration into the learning activities, the more flexibly the learning activities can be written.

To strengthen one's ability in writing learning activities there are a few basic principles*that can be applied to the writing of a set of learning activities.

* The definitions of the three following principles contain materials that have been taken directly or adapted from Popham, W. and Baker, E.L., Systematic Instruction (New Jersey: Prentice Hall, Inc., 1970).

Appropriate Practice

One of the simple principles that may be used in the development of learning activities is that the description of an activity for each performance objective (enabling and terminal) should permit students to practice the behavior or performance called for in the performance objective. Appropriate student practice in your learning modules should promote student attainment of competency statements. This principle is perhaps the most powerful of the principles that we should apply to our learning activities.

According to this principle, the instructor should provide opportunities during the learning activities for the student to behave in a manner consistent with the performance objective(s). To put it simply, you must let the students practice what they will be called upon to do in displaying mastery of the performance objectives. Common sense alone would tend to corroborate the utility of the principle. When we desire a student to set up a lathe for a cutting operation it is reasonable that the best way to have him become skilled is to give him practice in performing the skill.

There are two types of appropriate practice that can be employed--equivalent practice and analogous practice.

Equivalent Practice

This type of appropriate practice is one in which the student is provided with activities that are exactly like the final behavior or performance described in the performance objectives. The student's expected responses would be identical to those called for during evaluation. For example, if a student is to respond orally to a written test exercise, equivalent practice demands that he be given a chance to make oral responses to written exercises of the same kind as those used in the assessment.

Analogous Practice

A second type of appropriate practice provides that the student be given an opportunity to practice behavior that is similar but not identical to the final behavior or performance. In this practice or learning activity, called analogous practice, a student may be required to perform the same intellectual or thought operations but respond in a somewhat different way. For instance, instead of answering multiple-choice questions, he might be asked to make

responses about the correctness of a series of choices presented one at a time; or the student might be asked to respond orally when the actual evaluation calls for written responses.

In using the two types of appropriate practice it is sometimes more advantageous to use one in preference to the other. However, the use of some kind of appropriate practice during a learning activity is the method that all instructors are encouraged to employ.

The following is an example that uses both equivalent practice and analogous practice.

Enabling Objective: The student will be able to state from memory the basic parts of the automotive cooling system.

Analogous Practice: The student will write the names of the basic parts of the automotive cooling system from memory.

Equivalent Practice: The student will state orally the basic parts of the automotive cooling system from memory.

Knowledge of Results

A second principle to consider in the writing of learning activities is knowledge of results. According to this principle provisions should be made to enable the learner to determine the adequacy of his responses shortly after he makes them. In simple language we let the student "know how he is doing" in attaining the performance objectives.

When we are trying to provide knowledge of results in a module, bear in mind the following characteristics of this principle:

1. The student must be able to judge the acceptability of all important responses made during the learning activities.

2. There are many ways of providing knowledge of results.

3. And, knowledge of results must be provided immediately after the learner has made a response.

Avoiding The Inclusion of Irrelevancies

This third and very simple principle states that the inclusion of extraneous material in learning activities markedly obscures the attainment of performance objectives. Although it is a human error to include irrelevancies in learning activities, there are two simple rules for avoiding their inclusion:

1. Do not include learning activities for prerequisite behaviors.

2. Do not include activities unrelated to enabling performance objectives unless they are specifically designed to enhance or promote interest in the learning activities.

The three principles presented above can assist you in preparing learning activities. As you write learning activities try to apply these principles to the writing process.

Learning activities are a set of sequenced experiences written such that the student in each individual learning activity

.Receives a direction(s).
.Follows the direction(s).
.Is assessed on the information provided in the direction(s).

Therefore most learning activities consist of three basic parts. It may be that in some learning activities it is not necessary or practical to assess immediately the information received by the student, but possibly assessment would be conducted in the following activity.

Using the three basic parts to each learning activity a set of alternate activities is written for each enabling objective so that the student can attain each enabling performance objective and, ultimately, the terminal performance objective.

PRINCIPLES OF WRITING LEARNING ACTIVITIES

Instructions for Taking the Lesson

As you work through this lesson, fill in the blank(s) with the word(s) of your choice. At the end of the lesson, you will be given the answers with which to check your responses. Should one of your responses not correspond with the answer, reread the information until it is clear to you why the indicated answer is correct. There is no time limit; work at your own comfortable rate of speed.

Now turn the page and begin the lesson.

1. Learning activities in a CBE program can be described as a rather diverse set of statements which provide direction to students as they proceed in accomplishing the tasks described in performance objectives.

   What a student must accomplish as he moves toward attainment of the behavior described in a performance objective is stated in a set of _____ _____.

2. Learning activities are statements that describe action which the student must perform.

   Learning activities state what _____ a student must perform.

3. Remember that the emphasis in a set of learning activities is student action, and the action in each learning activity should move the student closer to what is called for in a performance objective.

   The action in each learning activity should move the student _____ to what is called for in a performance objective.

4. Learning activities should keep the student an active learner, not a passive "receiver."

   Students should not be _____"receivers" as they proceed through learning activities.

5. Read the following statements.

   a. "Read pages 75-80 in the textbook."

   b. "Read pages 75-80 in the textbook and then complete Case Problem A-3 page 81."

Statement _____ is an acceptable learning activity because it calls for student action.

Statement _____ is unacceptable as a learning activity because it puts the student in a passive "receiver" role.

6. Writing learning activities requires a consistent approach to learning and the learner.

   An important consideration in any approach to writing learning activities is that the approach be _____.

7. A set of learning activities must have order, that is, be clear and unambiguous as to what the student is to accomplish and the sequence in which he is to accomplish it.

   Learning activities should be in a _____ that is clear and unambiguous.

8. An acceptable technique for writing learning activities is to place them in a hierarchy, such as "simple to complex" or "known to unknown."

   If learning activities are written in a sequence of "simple to complex," they are said to be in a _____.

9. Placing learning activities in a hierarchy is one way of maintaining some consistency when writing them.

   Using a hierarchy when writing learning activities is an aid to maintaining a _____ approach.

10. Read the following statements (which could serve as basic learning activities).

_____ a. "Read information available and answer questions about various 'action' terms related to a baseball game."

_____ b. "Name the positions for all players which would be on the baseball field at one time for one team."

_____ c. "Read information and answer questions about symbols used to score a baseball game."

_____ d. "Practice using symbols to complete a baseball game scoring exercise

Place the statements above in a hierarchy by recording the numbers 1, 2, 3, and 4 on the appropriate blanks. Use number 1 to represent the first activity.

11. In CBE programs, learning activities are usually written to provide enough direction so a student can proceed independently with his learning.

CBE programs feature learning activities written so _____ student progress is possible.

12. One way to ensure that students can proceed independently is to write learning activities that include known sources which provide complete instructions for student performance.

_____ _____ instructions for student performance, contained within _____ sources, is one method of trying to ensure independent student learning.

13. Another factor which helps students work independently is if they know whether the work they are performing is being completed satisfactorily.

If a student has a way of knowing whether he is completing his work satisfactorily, he can work more _____.

C-8

14. Written instructions and directions, graphic presentations (still or audio-visual), and directions via knowledgable persons are three basic ways that students can get information as to whether they are performing satisfactorily.

A list that provides instructions on how to make coffee; a film loop that shows ten steps involved in making coffee; and having your instructor direct you as you make coffee - each of these is an example of a method which provides the student with _____ as to whether he is _____ satisfactorily.

15. Whenever possible in CBE programs, learning activities are written so that they provide alternate ways of progressing toward or practicing the behavior called for in a performance objective.

Acceptable learning activities in CBE programs provide _____ ways of progressing toward a behavior called for in a performance objective.

16. Providing alternate learning activities helps foster independent learning and allows the student to progress in an individual manner which best suits his learning style.

Both independent and individual learning are promoted by providing _____ learning activities.

17. Some persons play piano "by ear," others take lessons from a piano instructor while still others purchase a series of cassette tapes which teaches them how to play the piano.

The statements above represent _____ learning activities for learning how to play the piano.

18. Learning activities should provide practice in performing the behavior called for in the performance objective.

    One of the best ways to ensure that students can perform the behavior called for in the performance objective is to write learning activities that allow them to _____ the behavior.

19. If the behavior called for in the performance objective has elements across domains (psychomotor, cognitive, and affective), so should its accompanying learning activities.

    Learning activities from the psychomotor, cognitive, and affective domains should be written if they are necessary to perform the _____ called for in the performance objective.

20. In summary, learning activities provide the student with direction; emphasize student action; provide an orderly approach to learning; allow for learning sequencing; allow for faster independent and individual student approaches to learning; promote alternate approaches to learning; allow for the student to know if he is progressing satisfactorily; and provide for practice of the behavior called for in the performance objective.

Check all of the following that apply to learning activities for CBE programs.

_____ a. Narrow the scope of learning

_____ b. Provide practice of the behavior called for in the performance objective

_____ c. Promote alternate approaches to learning

_____ d. Provide knowledge of whether the student is progressing satisfactorily

_____ e. Allow the student to be a passive "receiver" of information

_____ f. Allow for faster independent and individual approaches to learning

_____ g. Provide learning sequence(s)

_____ h. Are meant to show the single, correct way to learn and practice a behavior

_____ i. Allow the student to set his own objectives

_____ j. Emphasize an active learning process

_____ k. Provide an orderly approach to learning

_____ l. Provide direction to the student

_____ m. Emphasize only psychomotor skills

Appendix D

Types of Assessment Procedures

Criterion Assessment

Learning Module 04

Types of Assessment Procedures

The criteria of acceptance for a terminal performance objective states the actual measurement and/or opinion that will be used to determine if the student has performed in such a way as to imply that he is proficient. There are many ways of evaluating the student's performance, but basically they are either objective tests of knowledge or performance/skill tests. The following techniques -- classified either as objective or performance-- are suggested for use in criterion assessment.

Objective	Performance
Multiple - Choice Items	Product
Matching Items	Process
Completion Items	
Essay Items	
Short - Answer Items	
Graphic Items	
Problem - Solving Items	

Writing test items is one of the most difficult tasks in developing a learning module. Besides requiring considerable time and effort, item-writing demands mastery of the subject, an ability to write clearly and concisely, and an ability to visualize job-like situations to include in the various problems. The items must directly reflect the performance objective and should measure the ability of the student to perform, not just his knowledge about the performance. Therefore a variety of assessment techniques, both objective and performance, are often used in a single assessment procedure. Each of the suggested techniques will be discussed briefly in terms of their use in an assessment procedure.

Objective Techniques

Multiple-Choice Items

The multiple-choice type of question is preferred for most simple knowledge tests. It can also be used to test certain skills. Multiple-choice questions are versatile and can be used to measure knowledge of facts, terminology, concepts, principles, and applications. This type of question not only tests the ability to recognize but also the ability to discriminate among several alternatives. It is especially effective as a means of requiring student to select what is relevant from an array of data. In a multiple-choice question the stem is a question or an incomplete statement. The stem is followed by four alternatives which are possible answers or completions of the stem. The student has to select the best of the alternatives.

Matching Items

Matching items are particularly appropriate when testing knowledge of materials that are factual and homogeneous in nature. This form of presenting items uses two columns of related words, phrases, symbols, or illustrations. The student then has to match each element in the basi list with the element in the other list to which it is most closely related. The number of elements in the other list should exceed by two or three the number in the basic list to insure that there are always alternatives left for the last element in the basic list.

Completion Items

Completion items can be used in a criterion test to test recall if they require very short answers that are limited to only a few words and which therefore can be scored objectively. Completion items usually take one of two forms: they can be questions requiring an answer of a single word or phrase, or they can be sentences with one or more blanks to be filled in with a word or short phrase.

Essay Items

An essay item usually calls for extensive discourse by the student. The major difference between essay items and short-answer items is in the length of the response rather than in the wording of the items. This type of question should be used only when the student is expected to do reflective or creative thinking, organize knowledge in the solution of a problem, and express his solution in writing.

Short-Answer Items

A short-answer item is a "supply-the-answer" kind of item that stands somewhere between the completion and essay question. The answer the student has to furnish is limited to a brief list, a phrase, or a short statement. Short-answer items can be used whenever the student is to recall facts, basic ideas or principles, or to make simple applications of what he has learned.

Graphic Items

This kind of item presents the "given" element pictorially and requires either a graphic or a verbal response, or a combination of the two.

Problem-Solving Items

With problem items, the knowledge test approaches a skills test. Problem-solving items require the student to apply rules to arrive at solutions as well as to understand concepts and principles.

Performance Techniques

A performance or skills test is a test that requires a student to accomplish a job-like task under controlled conditions. They emphasize the nonverbal; that is, they require the student to do something instead of just having him tell how to do it. However, the fact that a certain task involves the use of words does not keep it from being a performance test as long as it is job-like and is derived from the performance objective. The aim should be to make a performance test as much like working on the job as practicable.

Performance tests may generally be classified as product or process depending on whether the assessment is of "what the student produced" or "the way he approached the task". These two techniques, if properly used, can have maximum content validity for occupational areas. It is generally conceded that written tests are not a very dependable way to evaluate work performance and that some type of direct or indirect measure of actual performance is needed, such measure being of the product, the process, or both.

Product

The following four conditions indicate that a product performance test is feasible.

- The product of performance can be measured accurately and objectively (including, if necessary, use of a rating scale for product measurement).
- Much or all of the evidence needed to evaluate performance is found in the end product and little or none of the evidence is found in the way the performance is carried out.
- The proper sequence of steps to be followed is indeterminate or, although everyone knows the steps they are hard to perform and skill is ascertainable only in the final product.
- The evaluation of skill test procedures is not practicable because staff are not available to observe, record, and score these procedures.

Process

The following five conditions indicate when a process performance test is feasible.

- The steps in the procedure can be specified and are explicitly taught.
- The correctness of the outcome or the quality of the product depends on the performance of a highly specified procedure.
- The extent to which an individual deviates from accepted procedure can be accurately and objectively measured.

- Almost all the evidence needed to evaluate performance can be found in the way the performance is carried out.
- Enough staff are available to observe, record, and score the procedures used during the skill test (using rating scales, check lists, etc.).

When scoring process performance tests there are three principal kinds of scores: errors, accuracy, and speed. Errors can be incorrect responses, such as choosing the wrong tool, selecting inappropriate materials, using the wrong procedure, failing to observe a safety precaution, etc. Accuracy refers to the amount of deviation from some standard. (Accuracy is the usual score for product tests.) Speed is measured by determining how long it takes the student to accomplish the process or some part of the process. Deciding which measure or combination of measures should be used for a given skill test depends on the performance objective.

Performance Test Construction Checklist

Listed below are a number of questions to assist in developing, editing, and evaluating a performance test. The performance objective should be kept in mind as each question is answered and the appropriate decision is made.

1. Have you stated accurately as you can what you want the test to measure?
2. Is the performance being measured representative of that indicated in the performance objective?
3. Will the equipment and tools being used in the test permit the student to display the skill that is being measured?
4. Are you primarily interested in evaluating the result of the student's effort (product) or in how the product was achieved (process)?
5. Considering the skill being measured, what evaluation factor (speed, accuracy, or errors) should be used?
6. If the test yields more than one measure of performance, how can these subscores be combined and weighted?
7. If the test yields only a total score, is this score meaningful or is it composed of inconsistent parts?

8. Are there minor activities which can be omitted from the test or from the scoring?
9. Do the directions make it clear to the student exactly what he should do?
10. Will each student tested face the same initial situation?
11. Are the demands and conditions of the test as job-like as possible?
12. Is the student told only what he should do, or is he told how he should do it?
13. Are all aspects of recording and scoring performance as objective as they can be made?
14. Do the directions tell the student how he will be rated (accuracy, speed, errors)?

CRITERION ASSESSMENT

Learning Module 04

CRITERION ASSESSMENT

A criterion is a standard of judgment as well as an established rule or principle for testing. The criteria (the plural of criterion) of acceptance for a terminal performance objective list the standards of judgment or established rules by which the performance is considered acceptable. Since assessment is the act of formally estimating, determining , or fixing the amount of a quantity or quality, then Criterion Assessment is the measuring, estimating, or determining of the amount of a quantity or quality using a predetermined standard or rule.

In assessing student performance, this basic definition is applied in three ways.

1. Pretests are assessments prior to beginning the learning activities of a module. The pretest is diagnostic, prescriptive, and directive. It identifies whether the student (a) bypasses the rest of the module or (b) needs to concentrate on the areas indicated as weak or inadequate. (Pretests are based on Terminal Performance Objectives.)

2. Enabling Tests are assessments during the learning activities that are designed to furnish the student with the feedback that is an integral part of the learning process itself and to confirm his attainment of each capability before he proceeds to the next. This is possible because each learning experience systematically builds on a preceding learned capability. (Enabling Tests are based on Enabling Performance Objectives.)

3. Posttests are assessments at the conclusion of the learning activities of a module. As in the pretest, the posttest is diagnostic, prescriptive, and directive. It predicts the capacity of the student to proceed to related or advanced modules and identifies any areas in which the student is weak and needs to receive further learning experiences. (Posttests are based on Terminal Performance Objectives.)

All three kinds of assessment are very important and must be built into the module from the very beginning. However, there is another requirement for assessment that is perhaps even more important because it is the very foundation of the systems development process -- the validation of the system.

The validation process, during which the instruction system is brought up to a specified level of effectiveness by a "produce-test, revise-retest" development cycle, is a major innovation in curriculum development. One vehicle for validating the instructional system is the CRITERION TEST. Therefore, pretests, enabling tests, and posttests are criterion tests. The concept of using criterion tests to measure the effectiveness of instruction in addition to measuring student proficiency is truly a breakthrough in education.

The criterion tests serve as quality control instruments by comparing the performance demands placed on the student during the instructional process with the performance demands, competencies, of the actual job(s) for which the process is preparing him. To do this, criterion tests are used to evaluate terminal performance objectives, to evaluate individual learning activities, to evaluate the complete instructional system, and to continuously reevaluate the system after it has been implemented in the classroom.

Training under the instructional systems concept is ideally "learning-to-mastery"; that is, every student is to achieve at least the minimum standards (criteria) set forth in the terminal performance objective. In criterion assessment the individual's proficiency is measured against a predetermined set of absolute criteria, rather than against the proficiency of other students. Norm-referenced tests that rate individual performance against group norms cannot be used to evaluate either the students or the instructional process when there are explicitly stated performance objectives.

In the past, test construction methods have concentrated primarily on techniques that were designed to discriminate among students and to accentuate their differences. In an instructional system the goal is not to differentiate among the students, but to raise every individual's performance to the level specified as acceptable by the objectives. Thus, the main purpose of criterion assessment is to determine as accurately as possible WHEN a student has reached the acceptable level of performance. Criterion assessment separates the students along a time scale, not a proficiency scale.

The items in a criterion test or assessment are derived directly from performance objectives by recasting the objectives as questions or requests for demonstrations of specific skills and knowledge. Good performance objectives furnish all the necessary information for good test items -- the specific capability to be measured (Performance Statement), the conditions and limitations under which the student will perform (Conditions and Limitations), and the level of proficiency to be achieved (Criteria of Acceptance).

A good test must be relatively objective; that is, the judgment of the scorer should enter the scoring process as little as possible. Criterion assessment should treat everyone the same. As nearly as possible, every student should have the same opportunity to perform under the same conditions and to the same standards of proficiency. The directions, equipment, conditions, limitations, and standards should be the same for every student. A test is reliable and valid only insofar as it maintains equal treatment for every student.

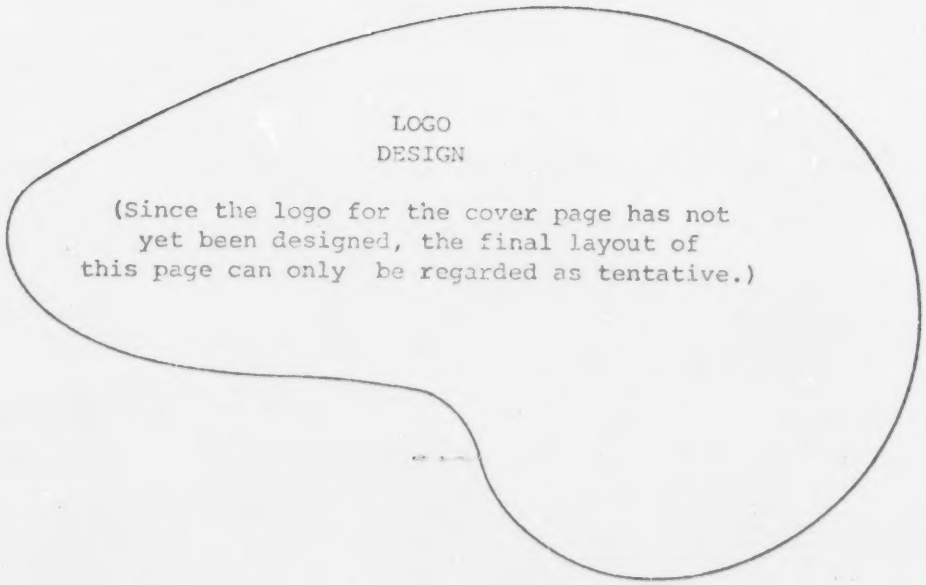
The criterion test must be economical regarding time, manpower, and facilities, but economy is strictly relative when applied to an instructional system. The gain in reliability and validity through using a truly comprehensive criterion performance test far outweighs the economy of group paper-and-pencil tests. In addition, as emphasized previously, assessment is used for many reasons other than discriminating among students.

Enabling testing provides feedback for the learning process and the confirmation of the correctness of performance needed by the student before proceeding to the next activity. Posttesting is needed before proceeding to the next or related modules in order to predict transfer. Moreover, continuous assessment of the system itself is needed. Therefore, although a good portion of student time is taken up with testing, it is not just testing for the sake of testing, but rather is testing as an integral part of the dynamic nature of an instructional system. In a completed and installed system, by far the greatest portion of testing time should be confined to student self-testing, as in the case of enabling testing which is informal. Formal testing is confined to pretests and posttests. It cannot be overemphasized that self-testing procedures must be treated as central to the learning process, and therefore must be completely nonaversive.

Appendix E

Recommended Format

CAREER DEVELOPMENT CENTER #1
DIVISION OF CAREER DEVELOPMENT PROGRAMS
D.C. PUBLIC SCHOOLS
WASHINGTON, D.C.


LOGO
DESIGN
(Since the logo for the cover page has not yet been designed, the final layout of this page can only be regarded as tentative.)

Learning Package (No.): (Title)

Course: (Title)

Cluster: (Title)

E-1

Learning Package (No.) - pg. 2 of 4 Objective (No.)

Course: (Title)

Learning Package: (Title)

Prerequisites:

Rationale:

- - - - - - - - - - - - - - - -(Separate Page)- - - - - - - - - - - - - - -

Learning Package (No.) - pg. 3 of 4 Objective (No.)

Competency Statement:

TERMINAL PERFORMANCE OBJECTIVE

Performance Statement:

Conditions/Limitations:

Criteria of Acceptance:

Pre-Test:

If after reviewing this learning package you think you have the capability to perform the terminal performance objective, ask your instructor for a pre-test.

Enabling Performance Objectives:

To achieve the terminal performance objective for this package you must be able to:

1.
2.
.
.
.
.
n.

Learning Activities:

Enrichment Activities:

Post-Test:

Instructions

Evaluation

Definitions of Format Headings

Course (Title): title of the course.

Learning Package (Title): a general and brief descriptor of the content of the learning package.

Prerequisites: state the entry-level requirements for the student to begin the learning package.

Rationale: states the justification for learning the content of the learning package--its relevance and purpose.

Competency Statement: a precise description of a work activity in terms of the basic skills, attitudes, and knowledge necessary for competent performance of that activity in an occupational area. Collectively, competency statements for an occupational area represent the basic skills, attitudes, and knowledge necessary for career success.

Terminal Performance Objective: an unambiguous description of a particular overt behavior(s) that is to be demonstrated by the student after completing a learning package, including the conditions and/or limitations imposed on the student and the criteria by which the demonstrated behavior will be accepted.

Pre-Test: (The role and function of pretests have not been finalized at the present time. Consensus seems to be that the pretest will be diagnostic and used for assessing the student's prior knowledge or behavioral capability in terms of the terminal and enabling performance objectives.)

Enabling Performance Objectives: a brief but general description of each discrete behavior that must be learned in order for the student to attain a terminal performance objective. However, student behaviors required in prerequisite terminal performance objectives are generally not restated as enabling behaviors in subsequent objectives.

Learning Activities: a series of activities designed to lead the student to the attainment of each enabling performance objective, and consequently, to the attainment of the terminal performance objective. These activities should allow for various alternatives in instructional methodology and for differences in learner characteristics.

Enrichment Activities: additional, optional learning activities designed to (1) supplement an area of study by strengthening or reinforcing the student's ability to attain the terminal performance objective, or (2) provide the student with challenging experiences that may lead him to pursue an area of interest.

Post-Test: a procedural instruction to the student to remind him to request a post-test situation when he completes the learning package and is ready to be assessed. (Post-Test Situation: a diagnostic test situation instituted by the instructor and used for assessing whether or not the student has successfully attained the behavior described in the terminal performance objective.)

Instructions

Evaluation

Appendix F

Learning Packets Samples

1. Advertizing Art (2)
2. Architectural Drafting (2)
3. Literary Arts (2)
4. Photography (2)
5. Printing (2)

Learning Packet

Course: Advertizing Art

Learning Package: Compostiional Forms

Prerequisite: None suggested

Rationale: Good basic compostion is one of the elements that makes a painting or other visual presentation an outstanding work of art. The use of good basic composition is equally important in advertizing art. This learning package is designed to assist you in being able to identify the eleven basic compositional forms.

TERMINAL PERFORMANCE OBJECTIVE

Competency Statement: Identifies basic compositional forms

Performance Statement: Being shown illustrations that exemplify the eleven basic compostional forms, you will correctly identify the basic form in each illustration and state why you made such an identification.

Conditions or Limitations: Each illustration must exemplify only one of the following forms:

1. horizontal	5. circular	9. oval
2. vertical	6. L-shape	10. square
3. diagonal	7. S-shape	11. pattern
4. triangular	8. T-shape	

No references may be used and all responses must be made within 45 minutes. You may study the illustrations as long as you wish, provided you complete all responses within the alloted time.

Criteria of Acceptance:

You must correctly identify each illustration as to its basic compositional form and state why you made that identification. All responses must be in agreement with the classroom references as judged by the instructor or other qualified professional and must be completed within the allotted time.

Pretest:

If after reviewing the learning package, you think you have the capability to perform the terminal performance objective, ask the instructor for a pretest.

01 Enabling Performance Objective: To achieve the terminal performance objective, you must be able to define the term composition and to identify the eleven basic compositional forms.

Learning Activities:

1. Using any available references, define the term "basic compositional form." Also list the eleven basic forms.

2. Sketch a picture of any subject matter with the elements arranged to show good compositional form.

3. Attend a lecture-demonstration on the basic compositional forms. Using magazines, select at least two photographs or displays for each of the basic compositional forms. Prepare a booklet with selections and have the instructor evaluate your work.

4. Have another student display the selections from the booklet he made of the basic compositional forms. Identify each selection.

02 Enabling Performance Objective: To achieve the terminal performance objective you must be able to justify your identifications of basic compositional forms.

Learning Activities:

1. Attend the lecture-demonstration on identifying and justifying basic compositional forms. The instructor will display several visual presentations. Identify the basic form in each presentation and list in writing why you made such an identification.

2. Select at least 15 different photographs or other visual displays. Identify the basic compositional form and state in writing why you made such an identification.

Posttest:

Instructions: The instructor will display eleven numbered illustrations and each illustration will exemplify one of the basic compositional forms. Using no references, write the number of the illustration on a sheet of paper and list the basic compositional form of that illustration. Also state why you made such an identification. You have 45 minutes to complete your work.

Evaluation:

You must correctly identify each illustration as to its basic compositional form and state why you made that identification. All responsed must be in agreement with the classroom reference as judged by the instructor and must be completed within the allotted time.

Learning Packet

Course: Advertizing Art

Learning Package: Pictorial Presentations

Prerequisites: None suggested

Rationale: The advertizer must be able to present his clients message through a variety of media. Pictures have always played an important role in communications and this is especially true in advertizing. Your objective in this learning package is to communicate a message through the use of a brief picture story.

TERMINAL PERFORMANCE OBJECTIVE

Competency Statement: Creates a picture story

Performance Statement: You will create a picture on a designated topic or theme using no more than three photographs,pictures, or sketches.

Conditions or Limitations: The instructor will designate the topic or theme. You may use any resources but the arrangement must be your own. You may use captions with the selected visual presentation, however, a caption must not exceed five works. You will be allotted nine hours to complete the assignment.

Criteria of Acceptance:

You must complete the assignment within the allotted time according to the following criteria as judged by the instructor:

1. Picture story conveyed the designated theme or topic
2. Picture story properly sequenced (there was a logical sequence of events).
3. Captions, if used, were appropriate to designated theme or topic and selected visuals.
4. Captions did not exceed five words.
5. All elements securely fastened and properly spaced.
6. Colors selected were in harmony and did not detract from topic or theme.

Pretest:

If after reviewing the learning package you think you have the capability to perform the terminal performance objective, ask the instructor for a pretest.

Learning Activities:

1. Using any available references make a list of the necessary elements of a picture story. Have the instructor check your work.

2. Attend a lecture-demonstration on creating and presenting picture stories. Take notes and ask questions on any information not clear to you.

3. Select several photographs of yourself or other members of your family and create a picture story.

4. Review any available resources for picture stories and list why a particular picture story is or is not acceptable.

5. Select several themes and develop a picture story for each theme. Present your story to the class for evaluation.

6. Have the instructor assign a theme or topic to you. Develop a picture story on the theme or topic using no more than three pictures, photographs, or sketches. You may use any resources but the arrangement must be your own. You may use captions but a caption must not exceed five words. You have nine hours to complete the assignment.

Evaluation:

You must complete the assignment within the allotted time according to the following criteria as judged by the instructor:

1. Picture story conveys the designated theme or topic
2. Picture story properly sequenced (there was a logical sequence of events).
3. Captions, if used, were appropriate to designated theme or topic and selected visuals.
4. Captions did not exceed five words.
5. All elements securely fastened and properly spaced.
6. Colors selected were in harmony and did not detract from topic or theme.

LEARNING PACKET 2 page 1 of 3

COURSE: Architectural Drafting

LEARNING PACKAGE: Architectural History

PREREQUISITES: None

RATIONALE:

Residential architecture in America has been greatly influenced by traditional styles, imported as well as native forms. The most common traditional styles are: Elizabethean, Georgian, Southern Colonial, Dutch Colonial, Cape Cod and Spanish.

Traditional American architecture has its roots in the architecture of the mother country. American architecture is not an original design but the outgrowth of many centuries of architectural development.

In order to develop an understanding of these influences on contemporary architecture, it is necessary to study the historical styles.

COMPETENCY STATEMENT:

Identifies the various styles of architectural structure.

TERMINAL PERFORMANCE OBJECTIVE

PERFORMANCE STATEMENT:

Being shown pictorial views of architectural structures from the historical, traditional, and comtemporary periods you will identify each structure by proper name.

CONDITIONS/LIMITATIONS:

Twenty pictorial views will be shown to you and may be presented from photographs, sketches and/or filmstrips. No references may be used and you will have 20 minutes to list your answers in writing.

CRITERIA OF ACCEPTANCE:

You must correctly identify at least 18 of the 20 pictorial views within the allotted time. Correct identification means your answer must be in agreement with the name listed by the instructor or found in one of the references in the classroom.

ENABLING PERFORMANCE OBJECTIVE #1

To achieve the terminal performance objective you must be able to identify historical styles of architecture.

LEARNING ACTIVITIES:

1. Read Architectural Drafting and Design, 2nd Ed., Chapter 2.

Make two freehand sketches of architecutral styles from the following periods:

a. Egyptian, Assyrian and Persian
b. Greek
c. Roman
d. Byzantine, Romanesque
e. Gothic
f. Renaissance
g. Classic Revival

Have the instructor check your work.

2. Make a portfolio of samples (pictures, views, etc.) or sketches of each style listed in activity number one. Present your portfolio to your instructor.

3. Ask the instructor for the sketches of structures from the historical period. Identify each structure by correct name. Have the instructor evaluate your work.

ENABLING PERFORMANCE OBJECTIVE #2

To achieve the terminal performance objective, you must be able to identify traditional styles of architecture.

LEARNING ACTIVITIES:

1. Read assigned material provided by your instructor. Make freehand sketches of each style:

a. English
b. Georgian
c. Regency
d. Colonial, Southern, Dutch and French
e. Cape Cod

Have the instructor check your work.

2. Make a portfolio using magazines for cut ups or copies, prints or freehand sketches of each of the styles listed in the traditional styles. Present to your instructor.

ENABLING PERFORMANCE OBJECTIVE #3

To achieve the terminal performance objective, you must be able to identify the contemporary styles of architecture.

LEARNING ACTIVITIES:

1. Read assigned materials on Contemporary Architectuer with special emphasis on the following styles:

a. Ranch
b. Split Level
c. Modern

2. Make a portfolio using pictures of each of the three contemporary styles (no sketches permitted) Submit your work to your instructor.

ENRICHMENT ACTIVITIES:

1. Exchange your portfolio with another student in the class. Study the contents to help quicken your identification skills of the styles shown. Test yourself in identification with the other student's help.

2. Prepare a written report on one of the country's leading architects, including a history of his work and examples (Photographs, pictures, sketches, etc.) If your instructor approves, prepare to give the report orally to the class, and include your samples of his work as visuals.

3. Select one of the styles of architectural structures you have studied and prepare a bulletin board display for room or hall. Label each style and on a 3"x5" card for each, list the significant elements that separate the style you have selected from other styles.

POST TEST:

You will be given a answer sheet on which to place your answers. The test will consist of your viewing 20 photographs, slides or sketches covering the three major styles of Architecture studied. You will write your answer on the answer sheet opposite the number of the identified picture.

You must identify correctly 18 out of 20 within 20 minutes.

LEARNING PACKETT 7.1 Page 1 of 4

COURSE: Architectural Drafting

LEARNING PACKAGE: Individual Room Plan (Living Room)

PRE REQUISITE: Learning Package #7
(Floor Plan Characteristics)

RATIONALE:

Ideally, a good house design satisfys the prospective owner's needs and desires. Each area should be planned with regard to (1) the different activities which may take place (2) the frequency and degree of use (3) age, sex and number of occupants (4) the occupations of the adults and (5) the furniture requirements. The owner is first in the designer's mind but because of the mobility of our society it would be wise to make the design as pleasing as possible to an future owner.

COMPETENCY STATEMENT:

Draws to scale the floor plan of a living room.

TERMINAL PERFORMANCE OBJECTIVE

PERFORMANCE STATEMENT:

You will draw the floor plan of a living room using given specifications.

CONDITIONS/LIMITATIONS

You will design your living room for a contractor and his wife and three teenagers - 1 girl and 2 boys. There is no square foot area limitation. Use the scale of 1/2" = 1' - 0". The open plan concept is to be applied. References may be used and you will have access to the required drafting materials and equipment. Time limit is 3 hours. Plan must show fireplace, window and door locations and furniture placement.

CRITERIA OF ACCEPTANCE

You must execute your plan within the time alloted so that it is drawn exactly to the given scale and meets the design standards for orientation, window and door location, traffic circulation and furniture placement as specified in the classromm references. Also, all lines must conform to the standards of the alphabet of lines and work must be free of erasure marks and smudges.

ENABLING PERFORMANCE OBJECTIVE#1

To achieve the terminal performance objective you must be able to identify and apply the rules of traffic circulation.

LEARNING ACTIVITIES:

1. Read - Architectural Drafting, 1967, by Stegman/Stegman page 47 and Architecture, Drafting and Design, 1965 Unit I - pages 13 - 15 - The Living Room.
   List in your own words the factors governing good traffic circulation.

2. Using any available references obtain three sample floor plans of a living room. Trace and evaluate the traffic paths thru each room. List why or why not the traffic circulation is acceptable or unacceptable, and list ways it may be improved.

ENABLING PERFORMANCE OBJECTIVE #2

To achieve the terminal performance objective you must be able to identify and apply the principles governing the orientation of the living room.

LEARNING ACTIVITIES:

1. Read, Architecture, Drafting and Design, by Hepler and Wallach, page 17
   Read, Architectural Drafting and Design, 2nd Edition, by Wedhaas, page 105.
   Make a list of the factors gover ing the orientation of the living room.
   Have the instructor check your answers.

2. Sketch the plan of your living room at home and trace and evaluate the the traffic pattern and the location or orientation of the room.

3. Attend the showing of examples of living rooms and their orientation according to set standards. Be prepare to evaluate any examples of living rooms shown by the instructor and relate why or why not their orinetation is good or poor.

ENABLING PERFORMANCE OBJECTIVE #3

In order to achieve the terminal performance objective you must be able to identify the open and closed plan concepts in the design of living rooms.

LEARNING ACTIVITIES:

1. Read Architecture, Drafting and Design by Hepler and Wallach, page 14
   Read Architectural Drafting by Stegman/Stegman page 45. Describe in your own words the open and closed concepts as used in the design of living rooms.

2. Using magazines, cut out examples of three open plan living rooms, and two of the closed plan concept. Present your examples to your instructor for evaluation.

ENABLING PERFORMANCE OBJECTIVE #4

To achieve the terminal performance objective you must be able to identify and apply the principles employed in window design and location.

LEARNING ACTIVITIES:

1. Read, Architectural Drafting, by, Stegman/Stegman pages 45-46
   Read, Architectural Drafting and Design, by, Hepler and Wallach pages 17-18.
   Read, Architecture by Spence page 31 and pages 52-54. Make a list of three major factors to consider in locating windows in the living room.
2. Select three samples of living rooms and evaluate the window location in each sample.
3. Sketch a living room and show window locations. Be prepared to explain why you located the windows where you did.

ENABLING PERFORMANCE OBJECTIVE #5

To achieve the terminal performance objective you must be able to identify and apply the principles that govern furniture arrangement.

LEARNING ACTIVITIES:

1. Read, Architecture, Drafting and Design by Hepler and Wallach pages 19-20.
   Read, Architectural Drafting, by Stegman/Stegman, pages 43-44.
   Read, Architectural Drafting and Design by Weidhaas, page 98.

   List the factors which govern the arrangement of the furniture in the room
2. Using any floor plan of a living room, sketch the furniture arrangement. Have instructor check your plan.
3. Complete problem #4 page 23 in Architecture, Drafting and Design, by Hepler and Wallach.
4. An attorney and his wife and 2 pre-school children are your clients. Design a living room using a freehand sketch. Present your sketch your to your instructor for critique. After your instructor approves, execute to scale. Present your plan to the instructor for evaluation.

ENRICHMENT:

1. Using the same given square foot area and the same furniture requirements design:
   1. A living room using the open plan concept
   2. A living room using the closed plan concept.

POST TEST

Instructions given access to the proper equipment and supplies, you are to execute a living room floor plan according to the following specifications.

1. No square foot area limitations
2. Open plan concept
3. Scale: 1/2" = 1'-0"
4. Occupants - Contractor/wife - 3 teenage children
   2 boys and 1 girl
5. Include a fireplace

6. Show window and door locations
7. Show furniture arrangement

This plan is to be completed within the alloted time of three hours and you may use references.

EVALUATION

You must execute your plan within the time alloted so that it is drawn exactly to the given scale and meets the design standards for orientation window and door location, traffic circulation and furniture placement as specified in the classroom referneces. Also, all lines must conform to the standards of the alphabet of lines and work must be free of erasure marks and smudges.

Learning Packet

Course: Literary Arts

Learning Package: Identification of Elements of Poetry

Prerequisite: Packet on elements of poetry

Rationale:

Poetry is one of mankind's oldest and most beautiful forms of communication. To fully appreciate poetry, it is helpful to understand the elements of poetry - how the words flow, why the language "sounds" beautiful, and how the poet suggest ideas though the use of certain dences. This packet will help you learn how poetry "works" as an art form.

TERMINAL PERFORMANCE OBJECTIVE

Competency Statement: Identifies selected elements of poetry.

Performance Statement: Given three poems, you will identify, in writing, the rhythmic pattern, each poetic device, and the poetic form employed in each poem.

Conditions or Limitations: No references other than poem may be used. The exercise must be completed within one hour.

Criteria of Acceptance:

You must complete the task within the allotted time and must identify the rhythmic pattern, each poetic device, and the poetic form employed in each poem. All identifications must be in agreement with available classroom resources.

Pretest:

If after reviewing the learning activities, you think you have the capability to perform the terminal performance objective, ask your instructor for the pretest.

01 Enabling Performance Objective: To achieve the terminal performance objective, you must be able to identify the rhythmic patterns (iambic, trochaic, anapestic, dactylic, free verse) in poetry.

Learning Activities:

1. Review the packet on the elements of poetry which you were provided by the instructor. Study particularly the section on rhythmic patterns. Participate in a class discussion on the meaning of meter.

2. Using any sources available, define the terms iambic, trochaix, anapectic, dactylic, and free verse. Write the definitions in your notebook.

3. Practice using the marks used to scan verse. Show samples of how each rhythmic pattern is marked.

4. Select poems at random from your poetry textbook. Scan several poems, read them aloud to determine where the syllabic stress falls naturally.

02 Enabling Performance Objective: To achieve the terminal performance objective, you must be able to identify the poetic devices (onomatopoeia, personification, simile, metaphor, oxymoron) used in poetry.

Learning Activities:

1. Review the packet on the elements of poetry which you were provided by the instructor. Study particularly the section on poetic devices.

2. Using any sources available, define the terms onomatopoeia, personification, simile, metaphor, and oxymoron. Write the definitions in your notebook.

3. Select poems at random for your poetry textbook. Identify as many different kinds of poetic devices as you can.

03 Enabling Performance Objective: To achieve the terminal performance objective, you must be able to identify the poetic form (triolet, sonnet, couplet, haiku shaped poetry, quatrain, Spenserian stanza, villanella, terza rima, free verse form) used in poetry.

Learning Activities:

1. Review the packet on the elements of poetry which you were provided by the instructor. Study particulary the section on poetic forms.

2. Using any sources available, define the following terms: triolet, sonnet, couplet, haiku, shaped poetry, quatrain, Spenserian stanza, villanella, terza rima free verse form. Write the definitions in your notebook.

3. Select poems at random from your poetry book. Identify as many different kinds of poetic forms as you can.

4. Practice writing from memory the rhyme scheme of the various poetic forms. For example, for the Spenserian stanza, practice writing abab, bcbc, cdcd, ee.
5. Select several poems from your poetry textbook. Practice identifying the rhythmic pattern, the poetic devices, and the poetic form used in each.

Posttest:

Instructions: The instructor will designate three poems in which you will identify the rhythmic pattern, each poetic device, and the poetic form employed in each poem. You may not use references, and all work must be completed within one hour.

Evaluation:

You must complete all work within the allotted time. You must identify the rhythmic pattern, each poetic device, and the poetic form employed in all three poems. All identifications must be in agreement with available classroom resources.

Learning Packet

Course: Literary Arts

Learning Package: Photo Journalism

Prerequisites: Photographic skills, interview techniques, and basic story writing skills.

Rationale:

The news feature story is an example of how communication may occur through the combining of two forms of media, pictures and words. The pairing of these two media takes many forms of expression. In this learning package your objective is to combine words and pictures to produce a news feature story.

TERMINAL PERFORMANCE OBJECTIVE

Competency Statement: Completes a photo journalism assignment.

Performance Statement: Given a photo journalism assignment you will produce a news feature story with photographs that is appropriate for the public news media.

Conditions or Limitations:

The instructor will select the assignment and prescribe the amount of time allowed to complete the assignment. You will have access to all required photographic equipment and may use any resources or references, however, the final product must represent your own work.

Criteria of Acceptance:

You must complete the assignment within the prescribed time according to the following criteria as judged by a qualified observer:

1. Story is clearly related to the topic or theme given in the assignment.
2. Story is produced in a style and format in accordance with the assignment and is appropriate for the public news media.

3. Story is compatible with the prints.
4. Story contains a logical progression of events.
5. Story is void of extraneous information.
6. Story contains all pertinent information.
7. Prints are properly sequenced.
8. Prints are sharply focused.
9. Prints are properly exposed.

Pretest:

If after reading the learning package you think you have the capability to perform the terminal performance objective, ask your instructor for the pretest.

01 Enabling Performance Objective:

To achieve the terminal performance objective you must be able to identify the components of a news feature story and the sequence and relationship of these components.

Learning Activities:

1. Using any available references write a definition of photo journalism as it relates to a news feature story. Also, list the components of a news feature story.

2. Attend a presentation given by the instructor on the composition of news feature stories. Describe in your own words the relationship between the elements of a news feature story.

3. Review magazines, newspapers (Sunday edition especially), and other materials and select at least two news feature stories. Identify the elements that compose these articles and evaluate the sequencing and relationship of the elements. Have the instructor evaluate your work.

02 Enabling Performance Objective:

To achieve the terminal performance objective you must be able to do the researching and planning necessary for the fulfillment of a photo journalism assignment.

Learning Activities:

1. Attend a presentation given by the instructor on how to research and plan for a news feature story. Develop a working outline that you will use as a guide in preparing a photo journalism assignment.

2. Using your working outline perform the research and planning necessary to complete an assignment on one of the following topics.

    1. People involved in community betterment.
    2. Students at the Penn Career Development Center.
    3. A story of a fire engine company.
    4. The people behind a TV news broadcast.
    5. A new and unusual building in D.C.

    Present your work to the instructor for evaluation.

03 Enabling Performance Objective:

To achieve the terminal performance objective you must be able to select the prints and compose the story for a news feature story.

Learning Activities:

1. Using any available resources list what factors should be considered in selecting prints for a news feature assignment.

2. Using two of the topics listed above, list what prints may be used in such stories and explain why you made such selections.

3. Have the instructor give an assignment to you. You will be provided with the prints for the assignment. Write the new story. When you have completed the assignment arrange with the instructor for several other students to review your work.

Posttest Instructions:

The instructor will select a photo journalism assignment for you that will require you to produce a news feature story with photographs. You will have access to all required photographic equipment and may use any resources or references. However, the final product must be your own work. The amount of time for the assignment will be determined by the instructor.

Evaluation:

You must complete the assignment within the allotted time according to the following criteria as judged by a qualified observer:

1. Story is clearly related to the topic on theme given in the assignment.
2. Story is produced in a style and format in accordance with the assignment and is appropriate for the public news media.
3. Story is compatible with the prints.
4. Story contains a logical sequence of events.
5. Story is void of extraneous information.
6. Story contains all pertinent information.
7. Prints are properly sequenced.
8. Prints are sharply focused.
9. Prints are properly exposed.

Learning Packet

Course: Photography

Learning Package: Negative Development

Prerequisite: Packet on basic camera usuage

Rationale: One of the basic skills in photography is the ability to develop various types of film. Your objective in this learning packet is to gain this essential skill.

TERMINAL PERFORMANCE OBJECTIVE

Competency Statement: Develops film using laboratory processing procedures

Performance Statement: You will develop 120 or 35mm black ans white film using laboratory processing procedures.

Conditions or Limitations:

You will be given a roll of exposed 120 or 35mm black and white film and access to a completly stocked darkroom and processing facility. Any references may be used and you must complete the processing within 1 1/2 hours.

Criteria of Acceptance:

You must complete the processing within the allotted time. The developed film must possess the following characteristics:

1. Film not crimped
2. Emulsion areas have been developed
3. Film shows no streaks
4. Film shows no water marks
5. Film not scratched or gouzed
6. Film shows no reticulation

Pretest:

If, after reviewing the complete learning packet, you feel you can perform as stated above, ask the instructer for a pretest.

01 Enabling Performance Objective: To achieve, as stated in the terminal performance objective, you must be able to load film on a reel for developing.

Learning Activities:

1. Using any available resources, study the procedure for loading film on a developing reel. List all precautions which should be taken when loading film.

2. Attend a demonstration, given by your instructer,on the procedures used to load film on a developing reel. Develop a procedural chart for loading film. Submit the chart your instructor for approval.

3. Obtain a roll of 120 or 35mm exposed film and practice loading it on a reel. Use your procedural chart while you practice.

02 Enabling Performance Objective: To achieve, as stated in the terminal performance objective, you must be able to identify basic processing chemicals used in the processing laboratory.

Learning Activities:

1. Attend a lecture/presentation, given by your instructer, on the types of processing chemicals available in the storeroom. Prepare a list that contains the name and use of each chemical.

2. Practice identifying processing chemicals with another student. In one case give the use for a chemical he names; in another case give the name of a chemical that can be used for a specific developing process.

3. Using any available references, prepare a list that identifies how the basic processing chemicals may be combined. Submit your list to your instructer.

03 Enabling Performance Objective: To achieve, as stated in the terminal performance objectice, you must be able to mix chemicals and control the temperatures of the mixtures.

Learning Activities:

1. Using the list you developed above and any available references, make a list of all safety precautions which must be observed when mixing chemicals.

2. Attend a demonstration, given by your instructer, on mixing basic processing chemicals and maintaining proper temperature while mixing procedures are being done. Practice mixing chemicals under your instructer's guidance.

3. Obtain a roll of 120 or 35mm exposed film, mix the chemicals necessary to develop the film. Practice this step as often as necessary as directed by your instructer.

Posttest:

Instructions: Obtain from your instructer, and develop a roll of 120 or 35mm black and white film. You will have access to a completely stocked darkroom and processing facility. Any references may be used and you must complete the processing within 1 1/2 hours

Evaluation:

You must complete the processing within the allotted time. The developed film must possess the following characteristics:

1. Film not crimped
2. Emulsion areas have been developed
3. Film shows no streaks
4. Film shows no water marks
5. Film not scratched or gouzed
6. Film shows no reticulation

Learning Packet:

Course: Photography

Learning Package: Camera Preparation

Prerequisite: None suggested

Rationale:

All work in photography begins with the basic care and operation of frequently used cameras. The skills needed to prepare cameras for use will serve you well during all of your photographic activities. This learning package is designed to assist you in developing basic skills related to camera preparation.

TERMINAL PERFORMANCE OBJECTIVE

Competency Statement: Prepares camera for use on assignment.

Performance Statement: You will clean, adjust, and load cameras for use on assignment.

Conditions or Limitations:

You will be given access to three cameras (35 mm, 2-1/4" x 2-1/4", and view), each of which you must clean, adjust, and load with film. All supplies and material necessary for cleaning, adjusting, and loading film will be available to you. Thirty minutes will be allowed to complete the exercise and the only references allowed will be operation manuals for each camera.

Criteria of Acceptance:

You must complete the exercise within the allotted time and in accordance with the following criteria:

1. Camera lens and inside body free of all lint and dirt.

2. All adjustments made and film loaded so a shot may be taken without further manipulation other than for differences in lighting.

Pretest:

If, after reviewing the complete learning package, you think you can perform as indicated in the terminal performance objective, ask your instructor for a pretest.

01 Enabling Performance Objective: To achieve, as stated in the terminal performance objective, you must be able to identify the parts and purposes of basic cameras.

Learning Activities:

1. Study the operator's manual and any other references on the parts and purposes of the 35 mm, 2-1/4" x 2-1/4", and view camera. Make a drawing each camera and label its main parts and state its main purpose.

2. Practice naming the parts and stating the purpose of each type of camera by working with another student.

02 Enabling Performance Objective: To achieve, as stated in the terminal performance objective, you must be able to clean, adjust, and load basic cameras.

Learning Activities:

1. Attend a demonstration, given by your instructor, on the cleaning of each of the three basic types of cameras - 35mm, 2-1/4" x 2-1/4", and view. Practice cleaning each type of camera.

2. Using the operator's manual and other references, study how to load film in each type of camera. Practice loading each type of camera with film. Have your instructor inspect your work as you perform it.

3. Using the operator's manual and other references, study how to adjust each type of camera after film has been loaded. Practice adjusting each type of camera. Your instructor will evaluate the adjustments.

4. Obtain an assignment sheet from your instructor. Complete the assignment and have your instructor evaluate your work.

Posttest:

Instructions:

You will be given the three basic cameras - 35mm, 2-1/4" x 2-1/4", and view and all supplies and materials necessary for cleaning, adjusting, and loading film. You must clean, adjust, and load film in each camera. Only operator's manuals may be used as references. You will have 30 minutes to complete the exercise.

Evaluation:

You must complete the exercise within the allotted time and in accordance with the following criteria:

1. Camera lens and inside body free of lint and dirt.

2. All adjustments made and film loaded so a shot may be taken without further manipulation other than for differences in lighting.

01 Enabling Performance Objective: To achieve the terminal performance objective you must be able to melt metal.

Learning Activities:

1. Using any available resources, study the safety rules that must be observed in melting metal. Make a list of these rules and have the instructor check them.

2. Attend a demonstration on melting metals. Make notes on the melting temperature of metal, the cleaning of metal and the techniques for pouring it into a pig mold.

3. Obtain some metal and under the supervision of the instructor melt the metal and pour it into a designated form.

02 Enabling Performance Objective: To achieve the terminal performance objective you must be able to identify the components of the linotype machine and to perform routine maintenance.

Learning Activities:

1. Study the manufacturer's manual and any other reference materials on the components and operation of a linotype machine. Explain to another student how the linotype machine operates and identify the all operating components.

2. Attend a demonstration on maintenance procedure which must be observed for the linotype machines in the printing shop. Make a list of what procedures must be followed daily and those procedures which must be completed periodically. The instructor will check your work.

3. Using your maintenance checklist, clean and lubricate a linotype machine designated by the instructor.

03 Enabling Performance Objective: To achieve the terminal performance objective, you must be able to use the keyboard by proper manipulation of your fingers.

Learning Activities:

1. Attend a demonstration on keyboard fingering. Note: Which fingers are used to strike the various keys. Examine a keyboard and ask the instructor if you have any questions on what fingers should be used in striking any letter or sign.

2. Prepare a list of forty words, that utilize all the letters of the alphabet. Practice these words on the keyboard. The instructor will check your fingering for correctness of position, smoothness, rhythm, and cadence.

3. Obtain a list of sentences and phrases from the instructor. Practice these as directed by the instructor.

04 Enabling Performance Objective: To achieve the terminal performance objective, you must be able to set up the linotype to cast a line.

Learning Activities:

1. Using any available resources, list what steps must be performed to cast a line with a linotype machine.

2. Attend a demonstration on setting up the linotype machine to cast a line. Be prepared to perform any of the following when so directed by the instructor:

   a. set length of line
   b. change magazine
   c. change mold
   d. set ejector
   e. adjust trimmer knife
   f. open and close machine

3. Obtain several set-up assignments from the instructor. Complete these and have the instructor evaluate your work.

4. Attend a demonstration on the operation of casting slugs. Identify the following phrases and be able to demonstrate how these are performed when casting slugs:

   a. justification of spacebands
   b. automatic quadder
   c. tabular composition

5. Obtain an assignment from the instructor. Cast the lines as directed. Keep a record of how long it requires you to complete the assignment and have the instructor evaluate your work. Obtain another assignment and complete it.

Posttest

Instructions: The instructor will give you a production sheet and require you to compose, proof and correct a metal form, using a designated linotype machine. You will have access to all materials and equipment necessary to complete the assignment. You have one hour to complete the assignment and you may not use any references.

Evaluation:

You must complete the task within the allotted time and the metal form must meet the specifications given in the production guide as to kind and size of type, position of type on the slug, length of slug, and spacing requirement. All spelling must be correct.

Learning Packet

Course: Printing

Learning Package: Operation of Linotype

Prerequisite: None Suggested

Rationale:

For many years the linotype machine was used extensively in the printing industry. In recent years its use has declined due to other forms of printing. However, these type of machines are still used in many smaller shops and thus the ability to operate this machine will broaden your career opportunities.

TERMINAL PERFORMANCE OBJECTIVE

Competency Statement: Prepares a metal form

Performance Statement: You will compose, proof and correct a metal form using a designated linotype machine.

Conditions/Limitations: You will be given a production guide and have access to all necessary materials and equipment. The instructor will designate the machine and you may not use references. One hour will be allotted to complete the task.

Criteria of Acceptance:

You must complete the task within the allotted time and the metal form must meet the specifications given in the production guide as to kind and size of type, position of type on the slug, length of slug, and spacing requirements. All spelling must be correct.

Pretest:

If after reviewing the learning package you think you have the capability to perform the terminal performance objective, ask your instructor for a pretest.

Learning Packet

Course: Printing

Learning Package: Operation of Ludlow typesetting machine

Prerequisite: Packet on linotype operation

Rationale:

The Ludlow typesetting machine has versatility in the production of signs, posters and other similiars forms of communication. Your ability to operate this machine will further increase your skills as a printer. This learning package is designed to assist you in achieving this ability.

TERMINAL PERFORMANCE OBJECTIVE

Competency Statement: Operates Ludlow typesetting machine to prepare a metal form.

Performance Statement: You will compose, proof and correct a metal form using a Ludlow typesetting machine.

Conditions or Limitation: You will be given a production guide and have access to all necessary materials and equipment. One hour will be allotted to complete the task and no references may be used.

Criteria of Acceptance:

You must complete the task within the allotted time and the metal form must meet the specifications given in the production guide as to kind and size of type, position of type on the slug, spelling, and word position and spacing.

Pretest:

If after reviewing the learning activities, you think you have the capability to perform the terminal performance objective, ask your instructor for a pretest.

01 Enabling Performance Objective: To achieve the terminal performance objective, you must be able to identify the operating components of a Ludlow machine and to perform routine maintenance.

Learning Activities:

1. Study the manufacturer's manual and any other reference materials on the operating components of a Ludlow machine. Explain to the instructor how the machine operates and identify all operating components.

2. Attend a demonstration on the maintenance procedures for a Ludlow machine. Make a checklist of what procedures must be followed daily and what maintenance must be completed periodically.

3. Using your maintenance checklist, clean and lubricate a Ludlow machine designated by the instructor.

02 Enabling Performance Objective: To achieve the terminal performance objective, you must be able to cast slugs using the Ludlow machine.

Learning Activities:

1. Study any available reference materials and make a list of the unique production features of the Ludlow machine.

2. Attend a demonstration on how to cast slugs, using the Ludlow machine. Take notes and ask questions on any information not clear to you. You will be required to perform the following:

   a. hold stick
   b. casting of slug
   c. longer lines
   d. centering, flush right and flush left
   e. adjusting of pig.

3. Obtain an assignment from the instructor. Complete the assignment and have the instructor evaluate your work.

4. Develop a job for the Ludlow machine and present it to the instructor. Develop a production guide and with the instructor's permission compose a metal form, proof the form, make any corrections and have your work checked.

Posttest:

Instructions: The instructor will give a production guide to you and require you to compose, proof and correct a metal form using the Ludlow machine. You will have access to all necessary materials and equipment. No references may be used and you will be alloted one hour to complete the work.

Evaluations:

You must complete all work within the allotted time and the metal form must meet the specifications given in the production guide as to kind and size of type, position of type on the slug, spelling, and word position and spacing.